AIR QUALITY REPORT

RECHE VISTA DRIVE REALIGNMENT FROM PERRIS BOULEVARD/HEACOCK STREET TO THE CITY LIMITS

FEDERAL PROJECT NO. STPL 5441

CITY OF MORENO VALLEY

LEAD AGENCY:

Caltrans

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)

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TABLE OF CONTENTS

TABLE OF CONTENTS CONTINUED

APPENDIX

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Air Quality Impact Analysis has been completed by Vista Environmental to determine the regional and local air quality impacts and global climate change impacts associated with the proposed Reche Vista Drive realignment from Perris Boulevard/Heacock Street to City limits (proposed project). The following is provided in this report:

- A description of the proposed project and alternatives;
- A description of the atmospheric setting;
- A description of the criteria pollutants and greenhouse gases;
- A description of the air quality regulatory framework;
- A description of the air quality and greenhouse gas thresholds including the National Environmental Protection Agency (NEPA) significance thresholds;
- An analysis of the short-term construction related air quality impacts;
- An analysis of the long-term operational air quality impacts;
- An analysis of the long-term operational global climate change impacts; and,
- An analysis of the conformity of the proposed project with the State Implementation Plan (SIP) and Regional Transportation Plan (RTP).

1.2 Proposed Project Description

The proposed project proposes to realign Reche Vista Drive between the Perris Boulevard/Heacock Street intersection and the northerly City limits. The realignment of Reche Vista Drive is a northerly extension of the projected alignment of Perris Boulevard. Roadway improvements will include realignment over existing right of way and construction of Reche Vista Drive to a two-lane roadway with paved shoulders. The existing Perris Boulevard/Heacock Street intersection will become a signalized T-intersection for the three merging streets. The need for this project is to provide roadway infrastructure improvements that shall reduce traffic congestion, improve safety and reduce travel times. The project will replace a winding switchback portion of Reche Vista Drive between the intersection of Reche Vista Drive/Heacock Street and the City limits. The improved roadway will have a length of approximately 2000 feet. Both Heacock and Reche Vista Drive are existing two-lane roadways, and have sufficient right of way for the realignment of Reche Vista Drive. Reche Vista Drive is a multi-jurisdictional highway that provides access from the City of Moreno Valley through Riverside County to cities in southern San Bernardino County. Future residential development is planned along the west side of the realigned Reche Vista Drive between the Perris Boulevard/Heacock Street intersection and the northerly City limits. The transition of the proposed roadway improvements will occur within the City limits. No approvals will be required from the County of Riverside. Additional design survey/topographic mapping will be performed to ensure proper transition. The site plan for the proposed project is shown in Figure 1.

Need and Purpose

The City of Moreno Valley predicts that by the year 2030, 21,800 vehicles per day will be traveling between Moreno Valley and the cities to the north. Realigning Reche Vista Drive, and thereby "filling in" the existing arterial highway gap in the Perris Boulevard alignment, will primarily assist these commuters traveling to and from commercial, industrial and residential developments in the surrounding areas.

The realignment of Reche Vista Drive will replace the existing winding switchback section of Reche Vista Drive located just to the west of the proposed roadway alignment. This realignment will create a direct connection between Perris Boulevard and Reche Vista Drive. The realignment will also result in the elimination of the three-legged all-way stop control intersection of Reche Vista Drive at Heacock Street. Elimination of this all-way stop-control will reduce vehicle delays and congestion. A traffic signal will also be installed at the proposed intersection of Perris Boulevard, Heacock Street, and Reche Vista Drive. This signal will reduce vehicle delays and thereby help reduce air emissions.

Reche Vista Drive is an alternative route between the City of Moreno Valley and south San Bernardino County. Vehicles traveling this route would be provided an alternative to using the congested State Route 60 and Interstate 215 freeway corridors. The project will enhance air quality by reducing Vehicular Hours of Travel (VHT) and Vehicle Miles Traveled (VMT).

The benefits of completing the gap of the Perris Boulevard/Reche Vista Drive alignment to the north City limits carry over into the County of Riverside and San Bernardino County. Currently, the County of Riverside has received funding and is preparing to realign and rehabilitate Reche Vista Drive and- Reche Canyon Drive from the San Bernardino County/Riverside County line to the northerly City limits of Moreno Valley. This county project extends to Heacock-Perris Blvd intersection and is 1-lane which would then widen these 2 lanes.

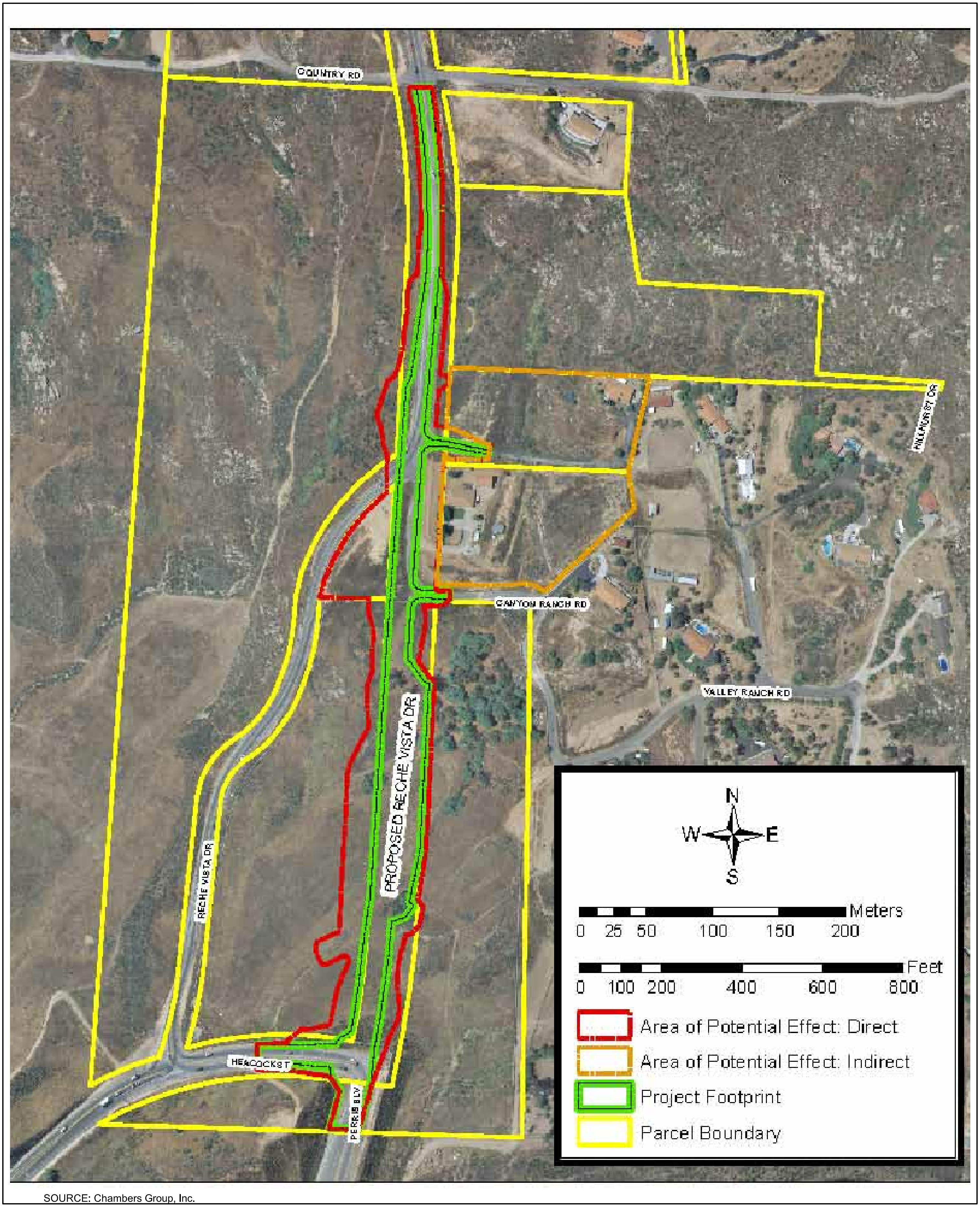
1.3 Proposed Project Alternatives

The no build and the two-lane alternatives have been evaluated for the Reche Vista Drive realignment improvements between the Perris Boulevard/Reche Vista Drive intersection and the north city limits. The selected two-lane realignment alternative would follow the existing right of way established through a northerly extension of the projected alignment of Perris Boulevard. Additional alignment alternatives were not considered based on the following:

- A shift of the proposed horizontal alignment either easterly or westerly from the proposed project's alignment would require reverse horizontal curves in order to match the existing roadway at the north and south project limits. One of the reasons for the project is to eliminate the reverse curve alignment on existing Reche Vista Drive.
- A shift of the proposed horizontal alignment to the east would necessitate full take acquisition of at least one residential property and multiple partial acquisitions.

- The right-of-way for this alignment was previously approved by Riverside County during the 1970's prior to the City's incorporation.
- To avoid a reverse curve alignment through the proposed Reche Vista Drive/Perris Boulevard/Heacock Street intersection.

The existing Level of Service (LOS) for this stretch of Reche Vista Drive is LOS D with an existing Average Daily Traffic (ADT) of 11,800. Year 2030 traffic is projected to increase to 21,800 ADT. Without the proposed improvements, the LOS along this portion of Reche Vista Drive would deteriorate to LOS F. With the proposed improvements, the Year 2030 LOS will be C. From this, the selected two-lane realignment alternative is the viable and practical solution for addressing traffic operations and congestion along Reche Vista Drive.



SOURCE: Chambers Group, Inc.

Figure 1
Proposed Site Plan

2.0 METEROROLOGICAL SETTING

The project site is located within the western portion of Riverside County, which is part of the South Coast Air Basin (SCAB) that includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SCAB is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the SCAB is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter.

The climate of western Riverside County, technically called an interior valley subclimate of the Southern California's Mediterranean-type climate, is characterized by hot dry summers, mild moist winters with infrequent rainfall, moderate afternoon breezes, and generally fair weather. Occasional periods of strong Santa Ana winds and winter storms interrupt the otherwise mild weather pattern. The clouds and fog that form along the area's coastline rarely extend as far inland as western Riverside County. When morning clouds and fog form, they typically burn off quickly after sunrise. The most important weather pattern from an air quality perspective is associated with the warm season airflow across the populated areas of the Los Angeles Basin. This airflow brings polluted air into western Riverside County late in the afternoon. This transport pattern creates unhealthful air quality that may extend to the project site particularly during the summer months.

Winds are an important parameter in characterizing the air quality environment of a project site because they both determine the regional pattern of air pollution transport and control the rate of dispersion near a source. Daytime winds in western Riverside County are usually light breezes from off the coast as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert interior of Southern California. These winds allow for good local mixing, but as discussed above, these coastal winds carry significant amounts of industrial and automobile air pollutants from the densely urbanized western portion of the SCAB into the interior valleys which become trapped by the mountains that border the eastern edge of the SCAB.

In the summer, strong temperature inversions may occur that limit the vertical depth through which air pollution can be dispersed. Air pollutants concentrate because they cannot rise through the inversion layer and disperse. These inversions are more common and persistent during the summer months. Over time, sunlight produces photochemical reactions within this inversion layer that creates ozone, a particularly harmful air pollutant. Occasionally, strong thermal convections occur which allows the air pollutants to rise high enough to pass over the mountains and ultimately dilute the smog cloud.

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the basin, there is not enough traffic in inland valleys to cause any winter air pollution problems.

Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the City of Moreno Valley are shown below in Table A. Table A shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table A - Moreno Valley Monthly Climate Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	65	67	69	75	79	88	94	95	90	81	73	66
Avg. Min. Temperature	40	43	45	48	52	57	61	62	59	52	44	40
Avg. Total Precipitation (in.)	2.98	3.04	2.58	0.81	0.42	0.13	0.10	0.22	0.42	0.50	0.91	1.51

Source: http://www.weather.com/outlook/recreation/ski/wxclimatology/monthly/graph/USCA0730?from=search

3.0 POLLUTANTS

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

3.1 Criteria Pollutants

The criteria pollutants consist of: ozone, nitrogen oxides, carbon monoxide, sulfur oxides, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

Nitrogen Oxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx is colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade source of NO_x are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NO_x and the pollutants formed from NO_x can be transported over long distances, following the patterns of prevailing winds. Therefore controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are sources of CO indoors. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Oxides

Sulfur Oxide (SOx) gases are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

Lead

Lead is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers.

Particulate Matter

Particle matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. PM is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM_{10}) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter ($PM_{2.5}$) have been designated as a subset of PM_{10} due to their increased health impacts and its ability to remain suspended in the air longer and travel further.

3.2 Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2005 California Almanac of Emissions and Air Quality, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). DPM is a subset of $PM_{2.5}$ because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a TAC in 1998 led CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in DPM by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States.

In addition, asbestos is also found in a natural state. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers to the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

To address some of the health concerns associated with exposure to asbestos from these activities, CARB has adopted two Airborne Toxic Control Measures (ATCMs). CARB has an ATCM for construction, grading, quarrying, and surface mining operations requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. This ATCM applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The ATCM also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity.

3.3 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and nitrous oxide (NO_x) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved in is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid 1700s. Each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This could result in an average global temperature rise of at least two degrees Celsius.

Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs)). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used as an aerosol spray propellant, i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and in race cars.

Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 HFC-134a are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

Global Warming Potential

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO_2. One teragram of carbon dioxide equivalent (Tg CO_2 Eq.) is essentially the emissions of the gas multiplied by the global warming potential. One teragram is equal to one million metric tons. The carbon dioxide equivalent is a good way to assess emissions because it gives weight to the GWP of the gas. A summary of the atmospheric lifetime and the GWP of selected gases is summarized in Table B. As shown in Table B, the GWP of GHGs ranges from 1 to 23,900.

Table B - Global Warming Potentials and Atmospheric Lifetimes

Gas	Atmospheric Lifetime	Global Warming Potential* (100 Year Horizon)
Carbon Dioxide	50-200	1
Methane	12 ± 3	21
Nitrous Oxide	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC: Tetrafluoromethane	50,000	6,500
PFC: Hexafluoroethane	10,000	9,200
Sulfur Hexafluoride	3,200	23,900

* Compared to the same quantity of CO_2 emissions.
Source: United States Environmental Protection Agency, 2006.

4.0 AIR QUALITY MANAGEMENT

4.1 Regulatory Setting

The proposed project is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

International

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by 2000 and methyl chloroform by 2005.

Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. NAAQS pollutants were identified using medical evidence and are shown below in Table C.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP.

Table C - State and Federal Standards

Air Pollutant	Concentration / Averaging Time: California Standards	Concentration / Averaging Time: Federal Primary Standards	Most Relevant Effects
Ozone (O_3)	0.09 ppm / 1-hour 0.07 ppm / 8-hour	0.075* ppm, / 8-hour	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm / 1-hour 9.0 ppm / 8-hour	35.0 ppm / 1-hour 9.0 ppm / 8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm / 1-hour 0.030 ppm / annual	0.053 ppm / annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm / 1-hour 0.04 ppm / 24-hour	0.14 ppm / 24-hour 0.03 ppm / annual 0.5 ppm / 3-hour (Secondary Stnd.)	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	50 µg/m3 / 24-hour 20 µg/m^3 / annual	150 µg/m3 / 24-hour 50 µg/m^3 / annual	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m3 / 24-hour 15 µg/m^3 / annual	
Sulfates	25 µg/m^3 / 24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) property damage.
Lead	1.5 µg/m^3 / 30-day	1.5 µg/m^3 / calendar quarter	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Source: 2007 Final AQMP.

* On March 12, 2008 the EPA revised the 8-hour "primary" ozone standard from 0.08 ppm to 0.075 ppm.

As indicated below in Table D, the Basin has been designated by the EPA as a non-attainment area for O_3 and suspended particulates (PM_{10} and $PM_{2.5}$). Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2).

Table D - South Coast Air Basin Attainment Status

Pollutant	National Standards	California Standards
Ozone (O_3)	Severe Non-Attainment	Non-Attainment
Carbon Monoxide (CO)	Maintenance[1]	Maintenance
Sulfur Dioxide (SO_2)	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Maintenance[2]	Maintenance[2]
PM10	Serious Non-Attainment	Serious Non-Attainment
PM2.5	Non-Attainment	Non-Attainment
Lead (Pb)	Attainment[2]	Attainment[2]

[1] The national standard for CO was achieved for the first time at the end of 2002, and the *2007 AQMP* identifies measures necessary to ensure that it does not go back into non-attainment.
[2] NO_2 is classified as being in maintenance since it is currently in attainment and the *2007 AQMP* identifies measures necessary to ensure that it does not go back to non-attainment.
Source: California Air Resource Board, 2008.

The EPA has designated SCAB as severe non-attainment for the 8-hour average ozone standard. On March 12, 2008 the EPA strengthened its 8-hour "primary" and "secondary" ozone standards to 0.075 ppm. The previous standard set in 1997, was 0.08 ppm. The SCAQMD, the agency principally responsible for comprehensive air pollution control in the SCAB, has developed a plan incorporated in the 2007 AQMP that shows measures to reduce 8-hour ozone levels to below the federal standard by June 15, 2021.

The EPA has designated SCAB as non-attainment for $PM_{2.5}$ and PM_{10}. In 1997, the EPA established standards for $PM_{2.5}$ (particles less than 2.5 micrometers), which were not implemented until March 2002. $PM_{2.5}$ is a subset of the PM_{10} emissions and whose standards were developed to complement the PM10 standards that cover a full range of inhalable particle matter. The SCAQMD has developed a plan that shows measures to reduce $PM_{2.5}$ levels to below the federal standard by 2015. For the PM_{10} health standards, the annual PM_{10} standard was revoked by the EPA on October 17, 2006 and the 24-hour average PM_{10} standard was to be achieved by December 31, 2006, however attainment of PM_{10} has not yet occurred.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO_2 and other greenhouse gases as pollutants under the federal Clean Air Act (CAA). To date, the EPA has not developed a regulatory program for greenhouse gas emissions, nor has it been mandated to do so.

State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. The CAAQS for criteria pollutants are shown above in Table C. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

The SCAB has been designated by the CARB as a non-attainment area for ozone, PM_{10} and $PM_{2.5}$. Currently, the SCAB is in attainment with the ambient air quality standards for CO, lead, SO_2, NO_2, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

On June 20, 2002, the CARB revised the PM_{10} annual average standard to 20 µg/m^3 and established an annual average standard for PM2.5 of 12 µg/m^3. These standards were approved by the Office of Administrative Law in June 2003 and are now effective. Per the request of the EPA, on February 11, 2004, CARB submitted a recommendation that SCAB be designated as non-attainment based on $PM_{2.5}$ monitoring from 2000 through 2002. On June 29, 2004, the EPA indicated its concurrence with this recommendation and on April 5, 2005, the SCAB was designated a non-attainment area for $PM_{2.5}$. On September 27, 2007 the CARB approved the South Coast Air Basin and the Coachella Valley 2007 Air Quality Management Plan for Attaining the Federal 8-hour Ozone and $PM_{2.5}$ Standards. The plan projects attainment for the 8-hour Ozone standard by 2024 and the $PM_{2.5}$ standard by 2015.

The CARB is also responsible for regulations pertaining to Toxic Air Contaminants (TACs). The Air Toxics “Hot Spots” Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into the SCAB. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a “waiver” request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the “waiver” request.

California Governor Arnold Schwarzenegger issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels
- 2020: Reduce greenhouse gas emissions to 1990 levels
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

In 2006, the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and best management practices that are technologically feasible and cost effective.

On December 6, 2007 CARB released the calculated Year 1990 GHG emissions of 427 million metric tons of CO_2e. In 2004, the emissions were estimated at 480 million metric tons of CO_2e. A reduction of 13 percent would be needed to reduce 2004 levels to 1990 levels. A series of early actions, tailpipe regulations and the development of fuels with less carbon in them are estimated to provide reductions totaling 66 million tons of CO_2e. The ARB staff is currently developing a Scoping Plan to develop programs and measures to address the remaining 107 million tons of CO_2e, in order to reach the total of 173 million tons by 2020. That plan was approved by the Board on December 11, 2008.

CARB also recently began developing statewide CEQA thresholds for GHG emissions and released *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act,* on October 24, 2008. CARB is currently holding workshops to discuss the proposed thresholds of significance for GHG emissions and plans to bring its recommendations to the Board at the March 26-27, 2009 meeting, where GHG emission thresholds may be adopted.

Regional

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the SCAB. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. On June 1, 2007, the SCAQMD approved the 2007 AQMP, which is designed to satisfy the California Clean Air Act (CCAA) tri-annual update requirements and fulfill the SCAQMD's commitment to update transportation emission budgets based on the latest approved motor vehicle emissions model and planning assumptions. The 2007 AQMP updated and revised the previous 2003 AQMP. The 2007 AQMP was prepared to comply with the federal and state CCAA and amendments, to accommodate growth, to reduce the high pollutant levels in the Basin, to meet federal and state ambient air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. The purpose of the 2007 AQMP for the SCAB is to set forth a comprehensive program that will lead this area into compliance with all federal and state air-quality planning requirements. Compared with the 2003 AQMP, the 2007 AQMP utilizes revised emissions inventory projections that use 2002 as the base year. On-road emissions are calculated using the CARB EMFAC2007 V2.3 emission factors and the transportation activity data provided by SCAG from their 2008 Regional

Transportation Plan (2008 RTP). Off-road emissions were updated using CARB's November 1, 2006 OFFROAD model. The focus of the Plan is to demonstrate attainment of the federal PM2.5 ambient air quality standard by 2015 and the federal 8-hour ozone standard by 2024. The 2007 AQMP incorporates several measures carried over from the 1997 AQMP and 1999 Amendment to the 1997 Ozone SIP.

The 2007 AQMP control measures consist of four components: 1) the District's Stationary and Mobile Source Control Measures; 2) CARB's Proposed Revised Draft State Strategy; 3) District Staff's Proposed Policy Options to Supplement CARB's Control Strategy; and 4) Regional Transportation Strategy and Control Measures provided by SCAG. Overall, the Plan includes 31 stationary and 30 mobile source measures. These measures primarily rely on the traditional command-and-control approach, facilitated by market incentive programs, as well as advanced technologies expected to be implemented by 2015 (for PM2.5) and 2024 (for 8-hour ozone). The stationary source control measures presented in the 2007 AQMP are proposed to further reduce emissions from both point sources (permitted facilities) and area sources (generally small and non-permitted). The basic principles followed in developing the SCAQMD's stationary source control measures included: 1) identify SOx and NOx reduction opportunities and maximize reductions by 2014; and 2) initiate programs or rule making activities for VOC control strategies aiming at maximum reductions by 2023 timeframe. The basic principles used in designing the SCAQMD's control strategy were to: 1) meet at least the same overall remaining emissions target committed to in the 1997/1999 SIP; 2) replace long-term measures with more specific near-term measures, where feasible; and 3) develop new short-term control measures and long-term strategies to achieve the needed reductions for attainment demonstration. The control measures in the 2007 AQMP are based on implementation of all feasible control measures through the application of available technologies and management practices as well as development and implementation of advanced technologies and control methods (i.e. zero emission, hybrid-electric, and alternative fueled vehicles and infrastructure, and capital and non-capital transportation improvements). Capital improvements consist of: high-occupancy vehicle (HOV) lanes; transit improvements; traffic flow improvements; park-and-ride and intermodal facilities; and urban freeway, bicycle, and pedestrian facilities. Noncapital improvements consist of rideshare matching and transportation demand management activities derived from the congestion management program.

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the SCAB. Instead, this is controlled through local jurisdictions in accordance to the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the *CEQA Air Quality Handbook* (SCAQMD CEQA Handbook), prepared by the SCAQMD, 1993, with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs of the AQMP. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that the SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the SCAB, and adverse impacts will be minimized.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the Federally designated metropolitan planning organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the *Regional Transportation Plan* (RTP) and *Regional Transportation Improvement Plan* (RTIP), which addresses regional development and growth forecasts. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The RTP, RTIP, and AQMP are based on projections originating within the City and County General Plans.

Local – City of Moreno Valley

Local jurisdictions, such as the City of Moreno Valley, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the 2007 AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with the CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

Objective 6.7 from the *City of Moreno Valley General Plan*, July 11, 2006, contains the following air quality-related policies that are applicable to the proposed project:

6.7.1 Cooperate with regional efforts to establish and implement regional air quality strategies and tactics.

6.7.5 Require grading activities to comply with South Coast Air Quality Management District's Rule 403 regarding the control of fugitive dust.

4.2 Monitored Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin.

Estimates of the existing emissions in the SCAB provided in the *2007 Air Quality Management Plan*, June 1, 2007, indicate that collectively, mobile sources and consumer products which are primarily under state and federal jurisdiction account for 72% of VOC (380 tons per day), 88% of NOx (577 tons per day), and 63% of SOx (27 tons per day).

The SCAQMD has divided the SCAB into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located on the northern portion of air monitoring Area 24, which covers the Perris Valley, including the Moreno Valley area. Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the project site have been used; Redlands-Dearborn Monitoring Station (Redlands Station) and San Bernadino-4th Street Monitoring Station (San Bernardino Station).

The Redlands Station is located approximately 6.4 miles northeast of the project site at 500 N. Dearborn, Redlands and the San Bernardino Station is located approximately 8.2 miles north of the project site at 24302 E. 4th Street, San Bernardino. Table E presents the monitored pollutant levels from these Monitoring Stations and Appendix A provides printouts from the CARB website where the data was obtained. Ozone and PM_{10} particulates were measured at the Redlands Station and CO, NO_2, and PM2.5 particulates were measured at the San Bernardino Station. However, it should be noted that due to the air monitoring stations distances from the project site, recorded air pollution levels at the air monitoring stations reflect with varying degrees of accuracy, local air quality conditions at the project site.

The monitoring data presented in Table E shows that ozone and PM_{10} and $PM_{2.5}$ are the air pollutants of primary concern in the project area. The State 1-hour concentration standard for ozone has been exceeded between 54 and 72 days each year over the past three years at the Redlands Station. The Federal 8-hour ozone standard was exceeded between 58 and 75 days each year over the past three years at the Redlands Station. There does not appear to be a noticeable trend in either maximum ozone concentrations or days of exceedances in the area.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of the SCAQMD contribute to the ozone levels experienced at the Redlands Station, with the more significant areas being those directly upwind.

Table E - Local Area Air Quality Monitoring Summary (Redlands and San Bernardino Air Monitoring Stations)

	Year		
Pollutant (Standard)	**2006**	**2007**	**2008**
Ozone:[A]			
Max. 1-Hour Conc. (ppm)	0.165	0.149	0.154
Max. 8-Hour Conc. (ppm)	0.135	0.124	0.120
Exceeds Thresholds?			
1- Hour > 0.09 ppm (days) – California	**62**	**54**	**72**
8- Hour ≥ 0.075 ppm (days)	**62**	**58**	**75**
Carbon Monoxide:[B]			
Max. 1-Hour Conc. (ppm)	2.8	3.7	2.4
Max. 8-Hour Conc. (ppm)	2.19	2.27	1.65
Exceeds Thresholds?			
1- Hour > 20. ppm (days)	0	0	0
8- Hour > 9. ppm (days)	0	0	0
Nitrogen Dioxide:[B]			
Max. 1-Hour Conc. (ppm)	0.088	0.083	0.091
Exceeds Thresholds?			
1-Hour > 0.25 ppm (days)	0	0	0
Inhalable Particulates (PM-10):[A]			
Max. 24-Hour Conc. (ug/m^3)	103	97	58
Annual Arithmetic Mean (AAM) (ug/m^3)	36.5	39.7	29.1
Exceeds Thresholds?			
24-Hour > 50 ug/m^3 (days) – California	**10**	**16**	0
24-Hour > 150 ug/m^3 (days) - Federal	0	0	0
Annual > 20 ug/m^3 (AAM) – California	**yes**	**yes**	**yes**
Annual > 50 ug/m^3 (AAM) - Federal	no	no	no
Ultra-Fine Particulates (PM-2.5):[B]			
Max. 24-Hour Conc. (pg/m3)	55.0	72.1	43.5
Annual Arithmetic Mean (AAM) (ug/m3)	17.8	17.8	--[c]
Exceeds Thresholds?			
24-Hour > 65 pg/m^3 (days)	**9**	**11**	**1**
Annual > 12 ug/m^3 (AAM)	**yes**	**yes**	**yes**

[A] Data obtained from Redlands Monitoring Station
[B] Data obtained from Riverside-Rubidoux Monitoring Station
[C] Data not yet available.

The State 24-hour concentration standards for PM_{10} have been exceeded between 0 and 16 days each year over the past three years at the Redlands Station, while the Federal 24-hour standards for PM_{10} has not been exceeded over the last three years at the Redlands Station. The annual PM_{10} concentration at the Redlands Station has exceeded the State but not the Federal standards for the past three years. The Federal 24 hour standard for $PM_{2.5}$ was exceeded between 1 and 11 days for the past three years at the San Bernardino Station. The annual average $PM_{2.5}$ concentration has exceeded the State and Federal standards for the last three years at the San Bernardino Station.

There does not appear to be a noticeable trend for PM_{10} or $PM_{2.5}$ in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM_{10} and $PM_{2.5}$). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

CO is another important pollutant that is due mainly to motor vehicles. Currently, CO levels in the region are in compliance with the State and Federal 1-hour and 8-hour standards. High levels of CO commonly occur near major roadways and freeways. CO may potentially be a continual problem in the future for areas next to freeways and other major roadways.

The monitored data shown in Table E shows that other than the exceedances in ozone, PM_{10} and $PM_{2.5}$ as mentioned above, no state or federal standards were exceeded for the remaining criteria pollutants.

5.0 AIR QUALITY STANDARDS

5.1 NEPA Thresholds of Significance

Consistent with NEPA Guidelines, a significant impact related to air quality would occur if the proposed project is determined to result in:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard, including National Ambient Air Quality Standards (NAAQS) or contribute substantially to an existing or projected air quality violation;
- Conflict with or obstruct regional compliance with NAAQS (TIP & RTP conformity to SIP);
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

5.2 Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, the SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the SCAB with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table F.

Table F - SCAQMD Regional Pollutant Emission Thresholds of Significance

	Pollutant Emissions (lbs/day)						
	VOC	NOx	CO	SOx	PM10	PM2.5	Lead
Construction	75	100	550	150	150	55	3
Operation	55	55	550	150	150	55	3

Source: http://www.aqmd.gov/ceqa/handbook/signthres.doc

5.3 Local Air Quality

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the SCAB. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The LSTs are shown below in Table G and are relative to the State and Federal standards shown above in Table C for these criteria pollutants.

Table G - SCAQMD Local Air Quality Thresholds of Significance

	Significance Thresholds	
Pollutant	Construction	Operations
NO_2		
1-Hour Average (State)	0.25 ppm	0.25 ppm
Annual Average (Federal)	0.053 ppm	0.053 ppm
PM10		
5-Hour Average*	50 $\mu g/m^3$	--
24-Hour Average	10.4 $\mu g/m^3$	2.5 $\mu g/m^3$
Annual Geometric Average	1.0 $\mu g/m^3$	1.0 $\mu g/m^3$
Annual Arithmetic Mean	20 $\mu g/m^3$	20 $\mu g/m^3$
PM2.5		
24-Hour Average	10.4 $\mu g/m^3$	2.5 $\mu g/m^3$
Sulfate		
24-Hour Average	1.0 $\mu g/m^3$	1.0 $\mu g/m^3$
CO		
1-Hour Average (State)	20 ppm	20 ppm
8-Hour Average (State/Federal)	9.0 ppm	9.0 ppm

* Based on SCAQMD Rule 403(d)(3).
Source: http://www.aqmd.gov/ceqa/handbook/signthres.pdf

According to the *Localized Significance Threshold Methodology*, prepared by SCAQMD, June 2003 and the *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol), prepared by California Department of Transportation (Caltrans), December 1997, for the NO_2 and CO pollutants, which do not currently exceed the State and/or Federal Standards as shown above in Table C, the LSTs are calculated by taking the significance threshold value shown above in Table G and subtracting the respective highest measured ambient pollutant concentration for the last three years. If the project-related NO_2 and CO emissions exceed this level, then the proposed project would have a significant impact to local air quality. For the PM_{10} and $PM_{2.5}$ pollutants, which currently exceed the State and/or Federal Thresholds as shown above in Table C, the LSTs are based solely on the values shown in Table G. If the project-related PM_{10} and $PM_{2.5}$ emissions exceed this level, the proposed project would have a significant impact to local air quality.

5.4 Toxic Air Contaminants

According to the SCAQMD , any project that has the potential to expose the public to toxic air contaminants in excess of the following thresholds would be considered to have a significant air quality impact:

- If the Maximum Incremental Cancer Risk is 10 in one million or greater; or
- Toxic air contaminants from the proposed project would result in a Hazard Index increase of 1 or greater.

In order to determine if the proposed project may have a significant impact related to hazardous air pollutants (HAP), the *Health Risk Assessment Guidance for analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, prepared by SCAQMD, August 2003, recommends that if the proposed project is anticipated to create HAPs through stationary sources or regular operations of diesel trucks on the project site, then the proximity of the nearest receptors to the source of the HAP and the toxicity of the HAP should be assessed. If the above screening method determines the proposed project may place the public in significant risk, than a comprehensive facility-wide health risk assessment (HRA) shall be performed.

5.5 Odor Impacts

An odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

> "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
>
> The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

5.6 Greenhouse Gases

While neither the California Appendix G Guidelines, nor any judicial decision or CEQA regulation or statute require an EIR to address a project's impact on greenhouse gases, consistent with the public policy rationale underlying AB 32, this Air Quality Impact Analysis does in fact analyze the project's impacts on greenhouse gas emissions. As defined under AB 32, greenhouse gas emissions include the following: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride.

The federal, state, regional and local agencies have not adopted significance thresholds related to Global Climate Change. While the Global Warming Solutions Act (AB32) created a framework for the reduction of GHGs in California, AB32 did not address the role of CEQA in achieving the goals of AB 32. The SCAQMD has formed a Working Group to develop significance thresholds related to GHG emissions. At the January 28, 2009 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends that a project show consistency with a GHG reduction plan and a quantitative threshold of 10,000 metric tons per year of CO_2e for industrial project emissions. The most current state GHG emission reduction policies have been defined in *CEQA AND CLIMATE CHANGE: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review*, prepared by the Governor's Office of Planning and Research (OPR), June 19, 2008. Since no quantitative emission threshold has been approved, this analysis has based its threshold of significance on the proposed project's consistency with the SCAQMD Working Group's proposed GHG emissions threshold for industrial project emissions, since that is the only quantitative GHG threshold that has been defined.

6.0 SHORT-TERM CONSTRUCTION IMPACTS

Construction activities associated with the proposed project would have the potential to generate air emissions, toxic air contaminant emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. The construction activities for the proposed project are anticipated to include: demolition of 55,750 square feet of existing roadway, site clearing and grading up to 8.9 acres, trenching, paving of approximately 4.22 acres of roadway, and construction of a signal at the T-intersection of Perris Boulevard, Heacock Street, and Reche Vista Drives. The proposed project is anticipated to start construction around November 2009 and take approximately 10 months to complete.

6.1 Potential Construction-Related Regional Impacts

The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

Construction-Related Criteria Pollutants Analysis

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed project's short-term construction emissions for the criteria pollutants. The phases of the construction activities which have been analyzed below are: 1) demolition, 2) site clearing and grading, 2) trenching, 3) paving, and 4) construction of the signal.

Methodology

Typical emission rates from construction activities were obtained from URBEMIS2007. URBEMIS2007 is a computer model published by the CARB for estimating air pollutant emissions. The URBEMIS2007 program uses the EMFAC2007 computer program to calculate the emission rates specific for Riverside County for construction-related employee vehicle trips and the OFFROAD2007 computer program to calculate emission rates for heavy truck operations. EMFAC2007 and OFFROAD2007 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Using URBEMIS2007, the peak daily air pollutant emissions during each phase was calculated and presented below. These emissions represent the highest level of emissions for each of the construction phases in terms of air pollutant emissions. The construction emissions printouts from URBEMIS 2007 are provided in Appendix B.

Except for where more specific fugitive dust emission rates were available, the default emission factor for disturbed soil of 20 pounds of PM_{10} per day per acre was used in the analysis. SCAQMD's Rule 403 minimum requirements require that the application of the best available dust control measures are used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. According to SCAQMD staff, application of the Rule 403 minimum requirements would provide a 55 percent reduction over the default calculated fugitive dust emission rates, however, this reduction was not included in order to present a worst-case analysis.

Roadway Demolition

The proposed project would require that approximately 55,750 square feet of existing roadway be demolished. The roadway demolition would only occur at each end of the proposed realigned roadway, while the remaining part of Reche Vista Drive that will be abandoned will be barricaded at both ends but left intact. In order to reduce the number of haul trucks, the material from the demolished roadway would be crushed and stored on-site and reused as road base. The demolition activities would be anticipated to start around July 2009 and would be performed over a three week period.

The demolition operations analysis have been based on the URBEMIS 2007 default demolition equipment that would be operating simultaneously during demolition operations, which identifies one concrete saw, one rubber tired dozer, and two of either a tractor, loader, or backhoe plus one crushing/processing equipment was added to account for the crushing of the roadway material. Emissions from the roadway demolition phase are presented below in Table H.

Table H - Air Emissions During Roadway Demolition

	Pollutant Emissions (lbs/day)[1]					
Activity	VOC	NOx	CO	SOx	PM10	PM2.5
Fugitive Dust	--	--	--	--	2.34	0.49
Off-Road Equipment	2.52	18.30	9.84	0.00	1.21	1.11
On-Road Equipment	0.00	0.04	0.02	0.00	0.00	0.00
Employee Travel	0.04	0.08	1.43	0.00	0.01	0.01
Total Emissions	2.57	18.43	11.28	0.00	3.56	1.60
SCQAMD Thresholds	75	100	550	150	150	55
Exceeds Thresholds?	No	No	No	No	No	No

Source: Vista Environmental, calculated from URBEMIS 2007 rev. 9.2.4

[1] Based on compliance with SCAQMD's Rule 403 minimum requirements.

The data provided in Table H shows that for the roadway demolition activities for the proposed project the VOC, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds of significance discussed above in Section 5.0. Therefore, a less than significant short-term regional air quality impacts would occur during the roadway demolition phase for the proposed project.

Site Clearing and Grading

The site clearing and grading would require up to 8.9 acres to be disturbed. The grading operations would require approximately 1,600 cubic yards of fill to be imported to the site. This analysis was based on the site clearing and grading to start at the end of November 2009 and be performed over a five month period.

The site clearing and grading operations analysis have been based on the URBEMIS 2007 default equipment, which identifies one grader, one rubber tired dozer, one water truck, and one of either a tractor, loader, or backhoe. Emissions from the site clearing and grading phase are presented below in Table I.

Table I - Air Emissions During Site Clearing and Grading

Activity	Pollutant Emissions (lbs/day)					
	VOC	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Fugitive Dust[1]	--	--	--	--	30.00	6.27
Off-Road Equipment	3.18	26.46	12.98	0.00	1.33	1.23
On-Road Equipment	0.03	0.48	0.17	0.00	0.02	0.02
Employee Travel	0.04	0.07	1.14	0.00	0.01	0.01
Total Unmitigated Emissions	3.25	27.01	14.29	0.00	31.37	7.52
SCQAMD Thresholds	75	100	550	150	150	55
Exceeds Thresholds?	No	No	No	No	No	No

Source: Vista Environmental, calculated from URBEMIS 2007 rev. 9.2.4
[1] Does not include the anticipated 55% reduction in fugitive dust from application of SCAQMD's Rule 403 minimum requirements.

The data provided in Table I shows that for the site clearing and grading activities for the proposed project the VOC, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds of significance discussed above in Section 5.0. Therefore, less than significant short-term regional air quality impacts would occur during the site clearing and grading phase for the proposed project.

Trenching Phase

After the grading is completed the trenching would be performed over an approximately one month period and would be anticipated to start around April 2010. The trenching operations analysis have been based on the default timing and number of equipment pieces required for the trenching of the approximately 8.9-acre area that will be disturbed, which includes two excavators, one other general industrial equipment, and one of either a tractor, loader, or backhoe. Emissions from the trenching phase are presented below in Table J.

Table J - Air Emissions During Trenching Operations

Activity	Pollutant Emissions (lbs/day)[1]					
	VOC	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Off-Road Equipment	2.06	17.69	8.22	0.00	0.88	0.81
Employee Travel	0.04	0.07	1.10	0.00	0.01	0.01
Total Emissions	**2.09**	**17.75**	**9.32**	**0.00**	**0.89**	**0.81**
SCQAMD Thresholds	75	100	550	150	150	55
Exceeds Thresholds?	No	No	No	No	No	No

Source: Vista Environmental, calculated from URBEMIS 2007 rev. 9.2.4
[1] Does not include the anticipated 55% reduction in fugitive dust from application of SCAQMD's Rule 403 minimum requirements.

The data provided in Table J shows that for the trenching for the proposed project the VOC, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds of significance discussed above in Section 5.0. Therefore, less than significant short-term regional air quality impacts would occur during the trenching phase for the proposed project.

Asphalt Paving Phase

After the trenching is completed the asphalt paving of the proposed roadway would be performed over an approximately one month period and would be anticipated to start around July 2010. The asphalt paving operations analysis have been based on the default timing and number of equipment pieces required for the paving of approximately 4.22 acres of roadway, which includes four cement mixers, two paving equipment, one paver, one roller, one of either a tractor, loader, or backhoe. Emissions from the asphalt paving phase are presented below in Table K.

Table K - Air Emissions During Asphalt Paving Operations

	Pollutant Emissions (lbs/day)					
Activity	**VOC**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Asphalt Off-Gas	0.44	--	--	--	--	--
Off-Road Diesel	2.98	18.01	10.28	0.00	1.57	1.44
On-Road Diesel	0.13	1.83	0.65	0.00	0.08	0.07
Employee Travel	0.07	0.14	2.35	0.00	0.02	0.01
Total Emissions	3.63	19.98	13.28	0.01	1.67	1.52
SCQAMD Thresholds	75	100	550	150	150	55
Exceeds Thresholds?	No	No	No	No	No	No

Source: Vista Environmental, calculated from URBEMIS 2007 rev. 9.2.4

The data provided in Table K shows that for the asphalt paving for the proposed project the VOC, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds of significance discussed above in Section 5.0. Therefore, less than significant short-term regional air quality impacts would occur during the asphalt paving phase for the proposed project.

Signal Construction Phase

After the asphalt paving is completed the construction of the signal would be performed over an approximately two month period and would be anticipated to start around July 2010. The building construction operations analysis have been based on the simultaneous operation of two signal boards, one aerial lift, one crane, one generator, and one welder. Emissions from the signal construction phase are presented below in Table L.

Table L - Air Emissions During Signal Construction Activities

	Pollutant Emissions (lbs/day)					
Activity	**VOC**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Off-Road Diesel	3.65	16.55	11.20	0.00	1.19	1.10
Vendor Trips	3.36	41.04	28.97	0.07	1.91	1.60
Employee Travel	1.89	3.51	59.49	0.07	0.53	0.29
Total Emissions	**8.90**	**61.10**	**99.67**	**0.14**	**3.62**	**2.99**
SCQAMD Thresholds	75	100	550	150	150	55
Exceeds Thresholds?	No	No	No	No	No	No

Source: Vista Environmental, calculated from URBEMIS 2007 rev. 9.2.4

The data provided in Table L shows that for the signal construction activities for the proposed project the VOC, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds of significance discussed above in Section 5.0. Therefore, less than significant short-term regional air quality impacts would occur during the signal construction phase for the proposed project.

Construction-Related Global Climate Change Analysis

Methodology

Potential GHG emissions of: CO_2, CH_4, and N_2O, may be created primarily from vehicular emissions during construction of the proposed project. The other GHG pollutants defined under AB 32, which include: HFCs, PFCs, and SF_6, will only consist of trace emissions, if any, during construction of the proposed project and have not been analyzed. The following provides the analysis methodology used for each pollutant addressed.

Carbon Dioxide

Typical CO_2 emission rates from construction activities were obtained from URBEMIS2007. URBEMIS2007 is a computer model published by the CARB for estimating air pollutant emissions. The URBEMIS2007 program uses the EMFAC2007 computer program to calculate the emission rates specific for Riverside County for construction-related employee vehicle trips and the OFFROAD2007 computer program to calculate emission rates for heavy truck operations. EMFAC2007 and OFFROAD2007 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour.

The URBEMIS2007 model analysis in the above criteria pollutants section for the proposed project has been used for this analysis of global climate change. The phases of the construction activities which have been analyzed are: 1) roadway demolition, 2) site clearing and grading, 2) trenching for utilities, 3) paving, and 4) signal construction. The annual CO_2 emissions was calculated and presented below.

Methane

CH_4 emissions were estimated based on the emissions ratio between CO_2 and CH_4 for construction and industrial equipment in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (IPCC Guidelines), which shows that for every 3,188 grams of CO_2 emitted, there would be 0.18 grams of CH_4 emitted.

Nitrous Oxide

N_2O emissions were estimated based on the emissions ratio between CO_2 and N_2O for construction and Industrial equipment in the IPCC Guidelines, which shows that for every 3,188 grams of CO_2 emitted, there would be 0.08 grams of N_2O emitted.

Construction-Related GHG Emissions

The construction-related GHG emissions of CO_2, CH_4, and N_2O were calculated as discussed above. The CO_2 emissions were calculated from the URBEMIS2007 model used above for the criteria pollutants. The URBEMIS2007 annual construction printouts are provided in Appendix B. The CH_4 and N_2O emissions were based on the ratios given above compared to the CO_2 emissions.

The GHG emissions that would be created with construction of the proposed project are shown below in Table M. Table M provides the tons of each pollutant emitted and the carbon dioxide equivalents (CO_2e.), which is based on the conversion factors shown above in Table C and provides a way to standardize GHG emissions between pollutants. Table M also shows how the proposed project's GHG construction emissions relates to the annual GHG emissions created throughout the State, which is based on the year 2004 when it was calculated that California emitted 480 million metric tons of CO_2e.

Table M - Construction-Related GHG Emissions

Pollutant	Tons Emitted	Tons of CO_2 Equivalents (CO_2e)	Metric Tons of CO_2 Equivalents (MT CO_2e)	Percent of California's Annual Emissions*
Carbon Dioxide (CO_2)	227.15	227.15	206.07	0.000047%
Methane (CH_4)	0.01	0.27	0.24	0.000000%
Nitrous Oxide (N_2O)	0.01	1.77	1.60	0.000000%
Total GHG Emissions	--	229.19	207.92	0.000048%

Source: Vista Environmental, calculated from URBEMIS 2007 rev. 9.2.4 and 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual.
* Percentage based on if all construction occurred in one year.

Table M above shows that construction-related GHG emissions from the proposed project would create 207.92 metric tons of CO_2e emissions. This would not exceed the SCAQMD Working Group proposed threshold of significance of 10,000 metric tons per year of CO_2e emissions, which has been discussed above in Section 5.0. Therefore, no significant short-term impact to global climate change would be anticipated to occur during construction of the proposed project.

6.2 Potential Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the SCAB. The proposed project has been analyzed for the potential local air quality impacts created from: construction-related fugitive dust and diesel emissions; from toxic air contaminants; and from construction-related odor impacts.

Local Air Quality Impacts from Construction

The proposed project's construction-related air emissions from fugitive dust and on-site diesel emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the SCAB.

The local air quality impacts have been analyzed using Version 3 of the Industrial Source Complex – Short-Term (ISCST3) Model and the methodology described in *Localized Significance Threshold Methodology*, prepared by SCAQMD, June 2003. Some key factors in the model setup included the bypass of the calms processing routine options, urban dispersion coefficients, dry removal plume depletion, and the use of the meteorological data provided by SCAQMD for Redlands in 1981.

The PM10 emissions were analyzed since the PM10 emissions have the most stringent local air quality standard as discussed above in Section 5.0. The PM10 emission rate of 31.37 pounds per day has been used in this analysis and is based on the URBEMIS2007 Model run performed for the on-site PM10 emissions for the site clearing and grading phase, which is the phase with the highest PM10 emissions and is summarized above in Table I. In order to be consistent with the URBEMIS 2007 Model run and to calculate the worst-case local air impacts, an area source of 2.5 acres was used and was placed on the most proximate area of grading to the nearest sensitive receptor. The PM10 emissions were analyzed based on a 24-hour averaging time with the emissions being produced for an 8-hour period between 7 a.m. and 3 p.m., which is when the grading operations are anticipated to occur.

The nearest sensitive receptors that may be impacted by the proposed project are single-family homes located as near as 30 feet east of the proposed area to be graded. Discrete receptors were placed at the locations of the nearest off-site structures and recreation areas and grid receptors were used out to 500 meters (1,640 feet). Figure 2 shows the location of the nearby sensitive receptors and the modeled worst-case PM_{10} construction emissions. Table N provides a summary of the calculated worst-case PM_{10} construction emissions at the six discrete sensitive receptors.

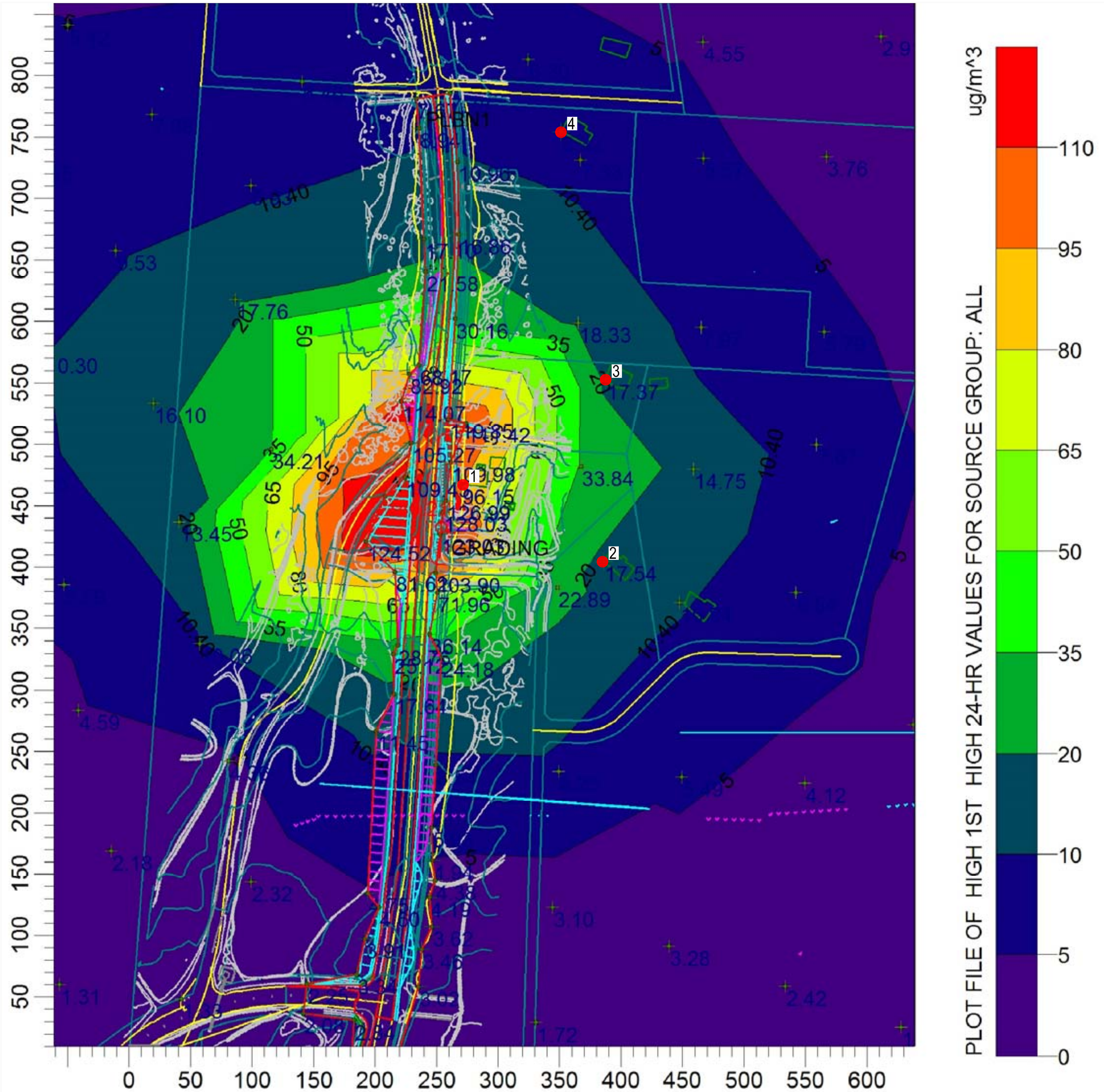
Table N - Local PM_{10} Construction Emission Levels Prior to Mitigation

Sensitive Receptor No.	General Description	Receptor Location X	Receptor Location Y	24- Hour Concentration (μg/m^3)
1	Residential approximately 30 feet east of area to be graded.	270.4	467.0	96.2
2	Residential approximately 360 feet east of area to be graded.	386.2	404.1	17.5
3	Residential approximately 430 feet east of area to be graded.	387.9	552.1	17.4
4	Residential approximately 270 feet east of area to be graded.	351.4	754.0	6.3
		Threshold of Significance		10.4

Source: Vista Environmental, calculated from ISC-AERMOD View Version 6.2.0.

Table N above shows that the maximum off-site PM_{10} emission level at the nearest sensitive receptor would be 96.2 μg per m^3. The local PM_{10} emissions would exceed the SCAQMD thresholds of significance of 10.4 μg per m^3. Therefore, a significant short-term local air quality impact would occur due to PM_{10} emissions during the grading of the project site.

The PM_{10} emissions would be primarily created through disturbed soil as well as from equipment exhaust. Incorporation of the following Mitigation Measures 1, 2, 3, 4, and 5 would reduce the local PM_{10} emission levels from the grading activities to a less than significant level:



LEGEND

4 Sensitive Receptor Site

N

SOURCE: AERMOD View Version 6.2.0

Figure 2

Local Air Quality Impacts from PM10 Construction Emissions

Prior to Mitigation

Mitigation Measure 1
The City shall require that the grading contractor apply soil stabilizer (polymer emulsions or organic fluids developed to reduce dust emissions) to inactive areas during the grading phases of the proposed project.

Mitigation Measure 2
The City shall require that the grading contractor water all exposed surfaces, including all haul roads three times per day during the grading phase of the proposed project.

Mitigation Measure 3
The City shall require that the grading contractor to restrict the speed of all construction vehicles operating on-site to less than 15 miles per hour during the grading phase of the proposed project.

Mitigation Measure 4
The City shall require that the grading contractor require all construction workers and construction equipment to drive on the paved portion of Canyon Ranch Road that lies within the future right of way of Reche Vista Drive and that this paved area shall be the last area to be graded.

Mitigation Measure 5
The City shall require that the grading contractor comply with the fugitive dust reduction requirements that are stated in SCAQMD's Rule 403.

The URBEMIS 2007 Model and ISCST3 Model were re-ran with taking Mitigation Measures 1, 2, 3, 4, and 5 into account. A summary of the mitigated results is shown below in Table O and Figure 3. Appendix C shows the detailed computer printouts of the Mitigated ISCST3 PM_{10} construction emission model run.

Table O - Mitigated Local PM_{10} Construction Emission Levels

Sensitive Receptor No.	General Description	Receptor Location X	Receptor Location Y	24- Hour Concentration ($\mu g/m^3$)
1	Residential approximately 30 feet east of area to be graded.	270.4	467.0	9.3
2	Residential approximately 360 feet east of area to be graded.	386.2	404.1	1.7
3	Residential approximately 430 feet east of area to be graded.	387.9	552.1	1.7
4	Residential approximately 270 feet east of area to be graded.	351.4	754.0	0.6
		Threshold of Significance		10.4

Source: Vista Environmental, calculated from ISC-AERMOD View Version 6.2.0.

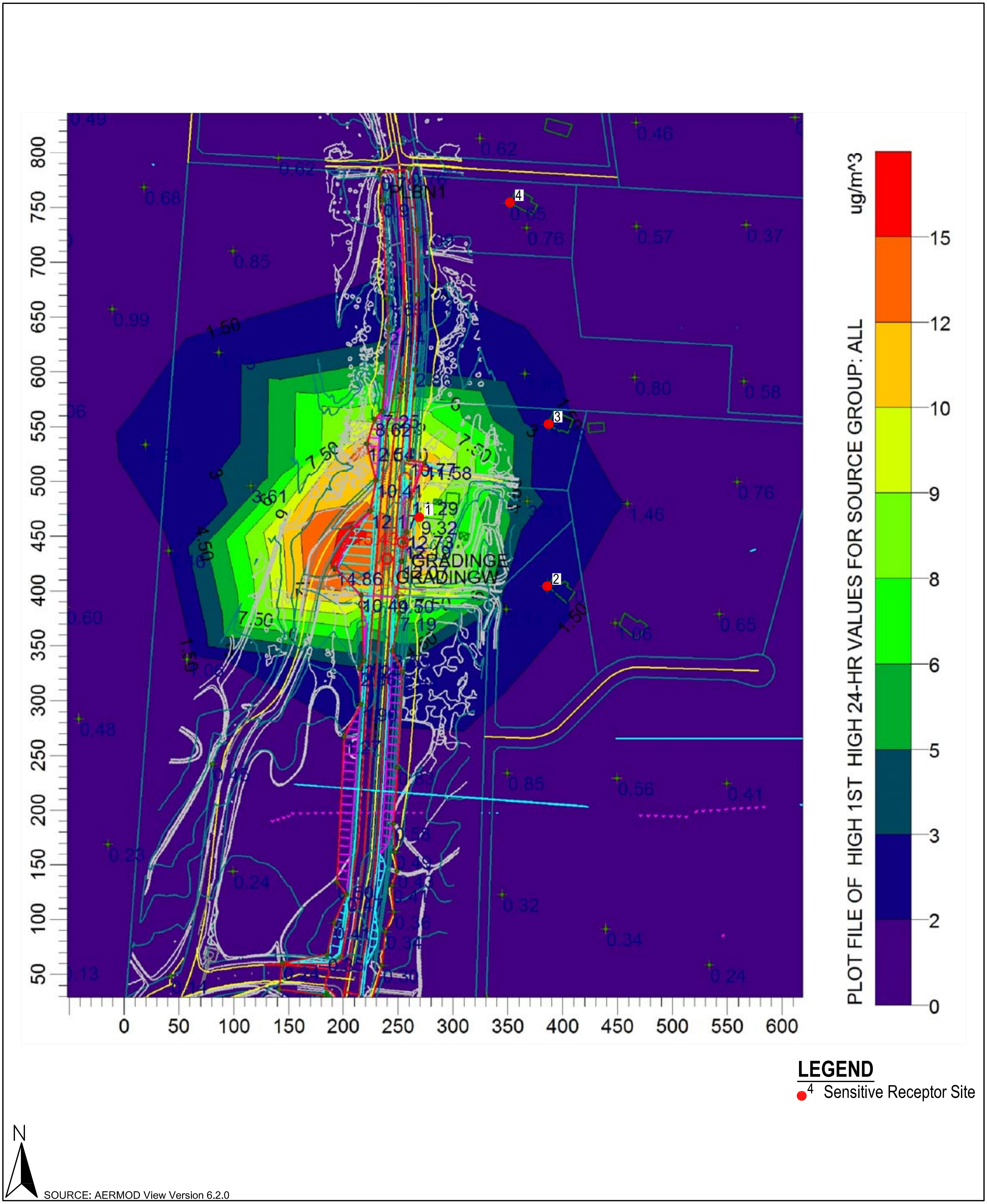


Figure 3
Mitigated Local Air Quality Construction Impacts from PM10 Emissions

Construction-Related Toxic Air Contaminant Impacts

The greatest potential for toxic air contaminant (TAC) emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. “Individual Cancer Risk” is the likelihood that a person exposed to concentrations of TAC’s over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 70 years) substantial source of TAC emissions and corresponding individual cancer risk. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

Construction-Related Asbestos Impacts

Asbestos may be found in a natural state. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers to the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

According to the *Geotechnical Investigation Reche Vista Drive Realignment Moreno Valley, California,* prepared by KOA Corporation, November 12, 2008, no ultramafic rock deposits were identified during the geotechnical field investigation of the project site. Therefore, no asbestos emissions are anticipated during construction of the proposed project.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are of short-term in nature and the odor emissions are expected cease upon the drying or hardening of the odor producing materials. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project.

7.0 LONG-TERM AIR QUALITY OPERATIONAL IMPACTS

Reche Vista Drive is an alternative route between the City of Moreno Valley and south San Bernardino County. Vehicles traveling this route would be provided an alternative to using the congested State Route 60 and Interstate 215 freeway corridors. The long term operations of the proposed project would not generate any additional traffic and would enhance air quality by reducing Vehicular Hours of Travel (VHT) and Vehicle Miles Traveled (VMT).

The long-term air quality impacts have been previously analyzed in the *Air Quality Conformity Analysis*, prepared by Chambers Group, Inc. The Air Quality Conformity Analysis analyzed the long term operations impacts associated with CO_2 hot spots, PM_{10} and $PM_{2.5}$ hotspots, which have been reprinted below. In addition, the long-term impacts to global climate change have also been analyzed.

7.1 Carbon Monoxide Hot-Spot Analysis

The ambient air quality effects of project-related traffic emissions were evaluated using the methodology presented in the *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol), prepared for Caltrans, December 1997. The CO Protocol provides a flow chart that may be used for new projects to determine the level of analysis required. The flow chart is provided in Figures 4a, 4b, and 4c with responses showing how it was determined that only the local CO impacts were required to be analyzed utilizing the CALINE4 dispersion model (Benson 1989) and the modeling procedures described below.

Roadway and Traffic Conditions

Traffic volumes and operating conditions used in the modeling were obtained from the traffic analysis prepared for this project. Carbon monoxide modeling was conducted using worst case scenario a. m. for existing and p.m. for 20 year with project traffic volumes. Carbon monoxide modeling was performed for the following scenarios:

- Existing (2008),
- 22-year horizon year (2030) without project, and
- 22-year horizon year (2030) with project.

Vehicle Emission Rates

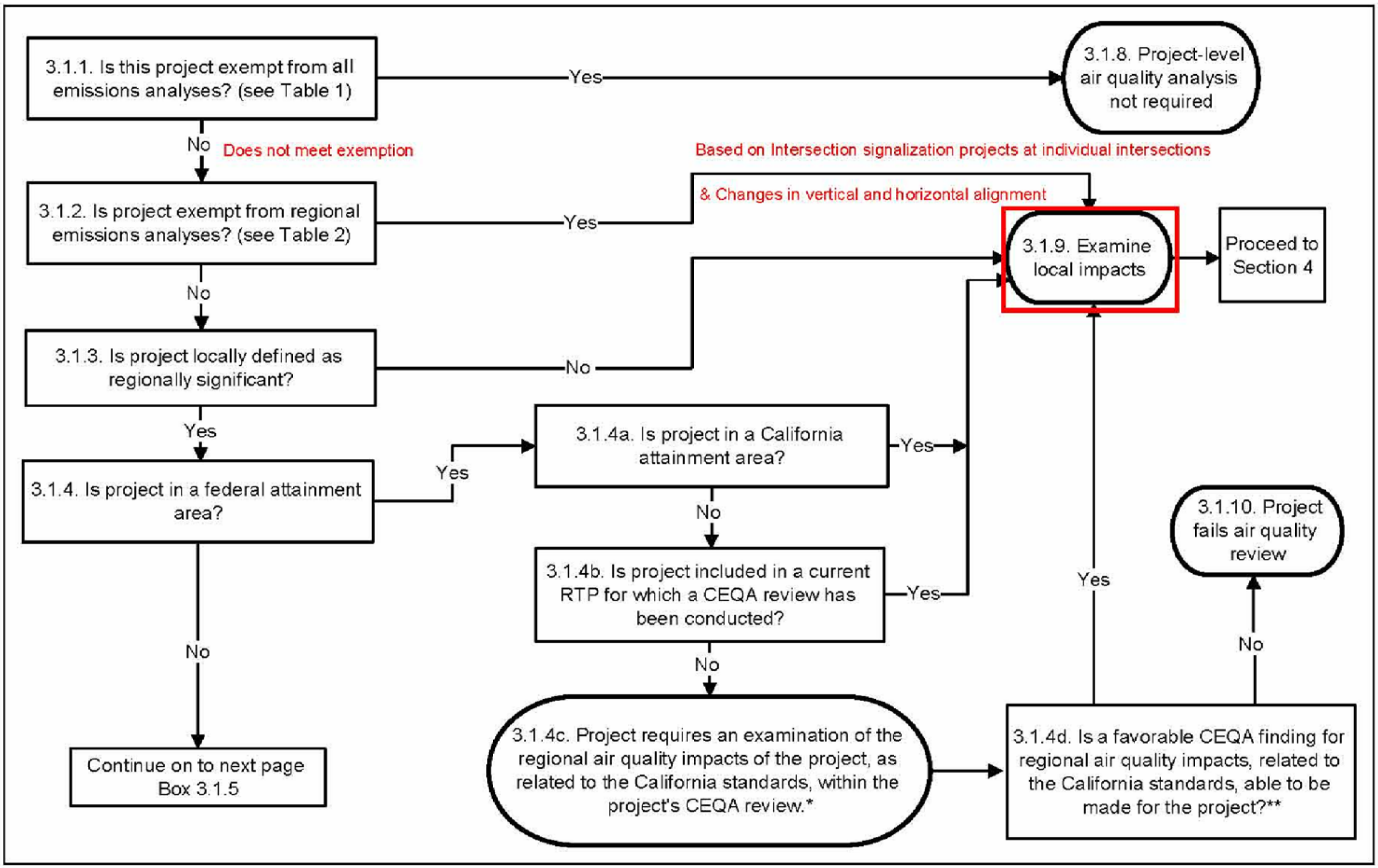
Vehicle emission rates were determined using the California Air Resources Board's EMFAC2007 emission rate program.

Receptor Locations

CO concentrations were estimated at four receptor locations located near the most congested intersections affected by the project. Those intersections included the following:

- Reche Vista and Drive and Heacock Street

Receptors were chosen based on Caltrans' CO protocol. Receptor heights were set at two feet.



~~F~~Figure 1. Requirements for New Projects

SOURCE: Transportation Project-Level Carbon Monoxide Protocol, prepared for Caltrans, December 1997.

Figure 4a
CO Protocol Flow Chart for New Projects

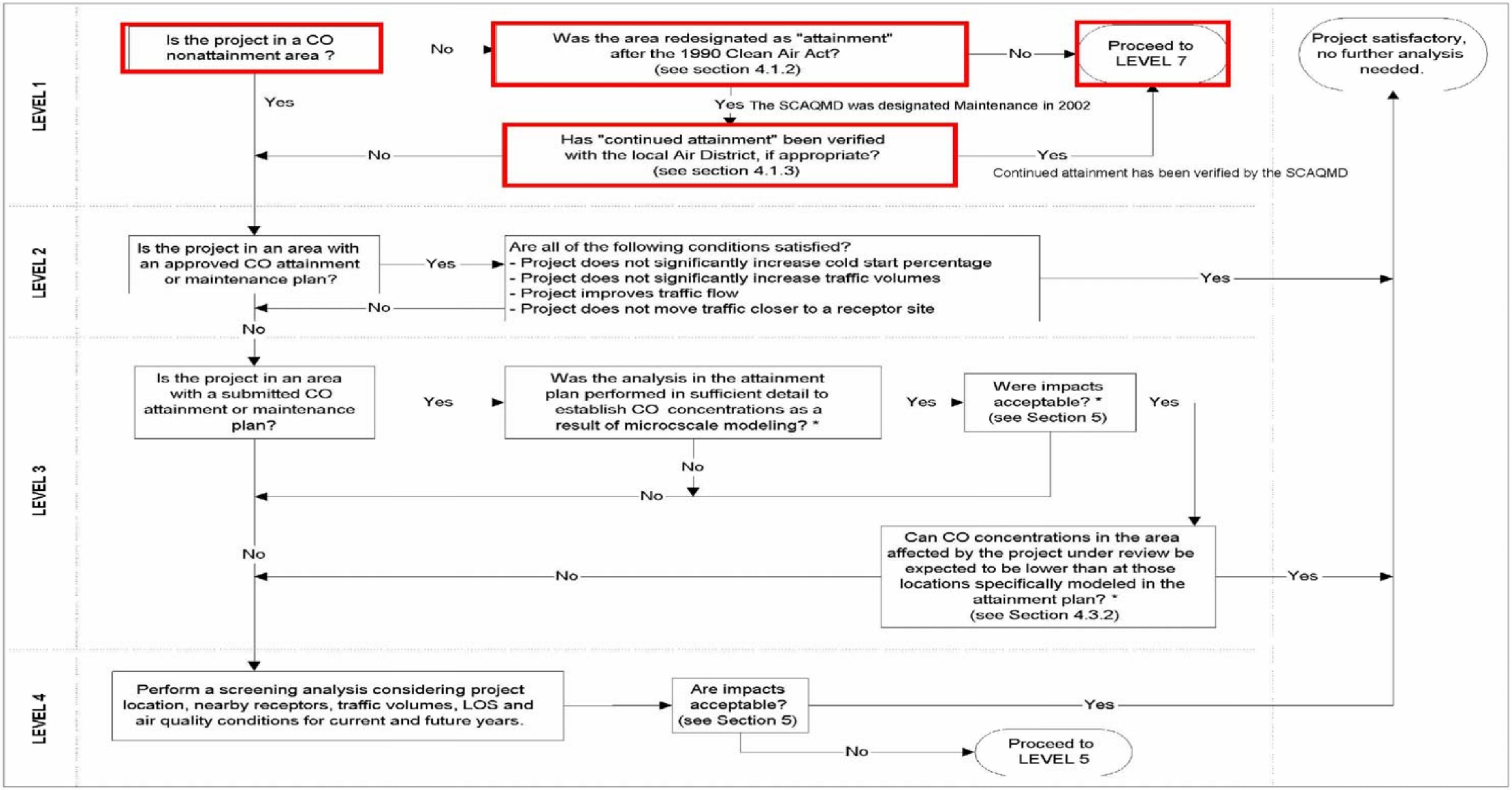


Figure 3. Local CO Analysis

4-10

SOURCE: Transportation Project-Level Carbon Monoxide Protocol, prepared for Caltrans, December 1997.

Figure 4b

CO Protocol Flow Chart for New Projects

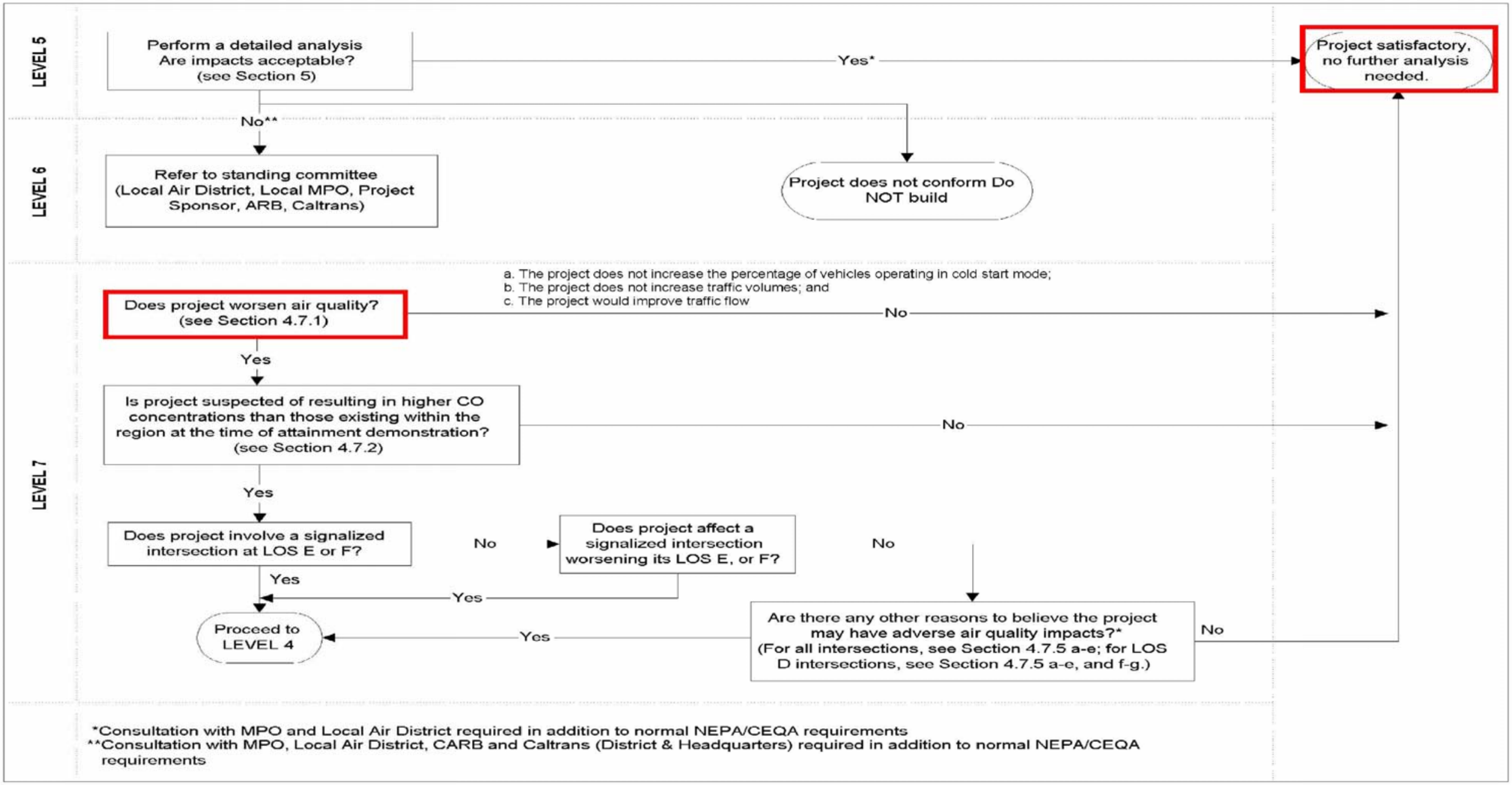


Figure 3 (cont.). Local CO Analysis

4-11

SOURCE: Transportation Project-Level Carbon Monoxide Protocol, prepared for Caltrans, December 1997.

Figure 4c
CO Protocol Flow Chart for New Projects

Meteorological Conditions

Meteorological inputs to the CALINE4 model were determined using the methodology recommended in the CO protocol (Garza et al. 1997). The meteorological conditions used in the modeling represent a calm winter period. The worst-case wind angles option was used to determine a worst-case concentration for each receptor. The meteorological inputs include:

- 1 meter per second wind speed,
- Class 7 Atmospheric stability class ,
- 270 degree wind direction standard deviation, and
- 100 meters mixing height.

Background Concentrations and Eight-Hour Values

A background concentration of 4 parts per million (ppm) was added to the modeled 1-hour values to account for sources of CO not included in the modeling. A background concentration of 2.4 ppm was added to the modeled 8-hour values. All background concentration data were taken from the monitoring data provided by the Air Resources Board (California Air Resources Board, 2007) for Reche Vista Drive and Heacock Street. The CO air quality modeling results are shown in Table P.

Table P - CO Modeling Results

	Existing (2008)		Future No Project		Future With Project	
Receptor	**1- Hour**	**8-Hour**	**1- Hour**	**8-Hour**	**1- Hour**	**8-Hour**
Reche Vista Drive and Heacock Street	5.1	3.2	5.1	3.2	4.6	2.8
CO Thresholds	20.0	9.0	20.0	9.0	20.0	9.0

Source: Reche Vista Drive Realignment Air Quality Conformity Analysis, prepared by Chambers Group, Inc.
Note: all values are in parts per million (PPM).

The modeling results shown in Table P indicate that total CO concentrations would not cause or contribute to any new localized violations of the federal 1-hour or 8-hour CO ambient standards.

The NEPA document for this project does not identify specific mitigation, minimization, or avoidance measures for CO. A written commitment to implement such control measures is therefore not required. The Project by its' nature will reduce CO.

The approved RTP and TIP for the project area has no CO mitigation or control measures that relate to the project's construction or operation. Therefore, a written commitment to implement CO control measures is not required.

7.2 PM2.5/PM10 Hot-Spot Analysis

The proposed project is not considered a Project of Air Quality Concern (POAQC) because it does not meet the definition of a POAQC as defined in EPA's Transportation Conformity Guidance (Final Rule), dated March 10, 2006. The following provides the criteria presented in the Transportation Conformity Guidance and briefly describes why the project does not fit the five types of Projects considered POAQC in the EPA Transportation Conformity Guidance:

1. *New or expanded highway projects that have a significant number of or significant increase in diesel vehicles.*

   According to the Traffic Analysis for the proposed project, there are currently 11,800 vehicles per day that utilize the portion of Reche Vista Drive that is proposed to be realigned. In the year 2030 this traffic in this section is anticipated to increase to 21,800 vehicles per day. The project is not a new or expanded highway and will not increase diesel vehicles (defined as greater than 125,000 Annual Average Daily Traffic (AADT) and 8% or more of such AADT is diesel truck traffic) along the proposed alignment.

2. *Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.*

   The project will not increase the number of diesel vehicles, or change the Level of Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;

3. *New bus and rail terminals and transfer points that have a significant number of diesel vehicles operating at a single location.*

   The Project is not a new bus and rail terminal or transfer point and does not result in a significant number of diesel vehicles congregating at a single location;

4. *Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.*

   The Project is not an expanded bus and rail terminals or transfer point; and

5. *Projects in or affecting locations, area, or categories of sites which are identified in the $PM_{2.5}$ or PM_{10} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.*

   The Project is in an area, which is identified as non attainment for $PM_{2.5}$ and PM_{10} in the Final 2007 Air Quality Management Plan (2007 AQMP) and the 2008 Regional Transportation Improvement Program (2008 RTIP). The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) both concurred with the findings in the 2008 RTIP and Amendment #1 to the 2008 RTIP and the concurrence letters are provided in Appendix D. The project does not conflict with either the 2007 AQMP or the 2008 RTIP and does not result in an increase in traffic volumes or increase the number of diesel vehicles using the roadway. Therefore, the proposed project will not increase the sources of particulate matter in the affected area.

Therefore, a PM hot-spot analysis is not required.

7.3 Operations-Related Mobile Source Air Toxics Analysis

The operations-related mobile source air toxics have been analyzed based on the *Interim Guidance on Air Toxic Analysis in NEPA Documents*, prepared by the FHWA on February 3, 2006. This document categorizes different roadway projects and their potential to create significant mobile source air toxic (MSAT) emissions. The following analysis is based on a category 2 project for a new interchange with a new connector road.

For each alternative in this EIS/EA, the amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. Because the VMT estimated for the No Build Alternative is higher than for any of the Build Alternatives, higher levels of regional MSATs are not expected from any of the Build Alternatives compared to the No Build. In addition, because the estimated VMT under each of the Build Alternatives are nearly the same, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent from 2000 to 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

Because of the specific characteristics of the project alternatives [i.e. realignment of an existing roadways], under each alternative there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely be most pronounced along the new realigned roadway section. However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations.

In sum, under all Build Alternatives in the design year it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the No Build Alternative, due to the reduced VMT associated with more direct routing, and due to EPA's MSAT reduction programs. In comparing various project alternatives, MSAT levels could be higher in some locations than others, but current tools and science are not adequate to quantify them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

7.4 Operations-Related Global Climate Change Analysis

Section 7.1 above found that the on-going operations of the proposed project will reduce vehicle emissions when compared to the no project alternative, which would also reduce GHG emissions generated by vehicles. The proposed project would provide design features that comply with GHG emission reduction strategies that have been defined by the OPR. The OPR GHG emission reduction strategies, and the proposed project's compliance with these strategies are summarized in Table Q.

Table Q - Project Compliance With Greenhouse Gas Emission Reduction Strategies

Strategy	Project Compliance With Reduction Strategy
Land Use and Transportation	
Implement land use strategies to encourage jobs/housing proximity, promote transit-oriented development, and encourage high density development along transit corridors. Encourage compact, mixed-use projects, forming urban villages designed to maximize affordable housing and encourage walking, bicycling and the use of public transit systems.	**Not applicable.**
Encourage infill, redevelopment, and higher density development, whether in incorporated or unincorporated settings.	**Not applicable.**
Encourage new developments to integrate housing, civic and retail amenities (jobs, schools, parks, shopping opportunities) to help reduce VMT resulting from discretionary automobile trips.	**Compliant.** The proposed project would reduce VMT through the realignment of Reche Vista Drive.
Apply advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods and services.	**Compliant.** The proposed project would construct a traffic signal at the Perris Boulevard/Reche Vista Drive and Heacock Street intersections, which would improve operational efficiency of the roadways.
Incorporate features into project design that would accommodate the supply of frequent, reliable and convenient public transit.	**Compliant.** The proposed realignment of Reche Vista Drive would improve the safety along this section of roadway, which reduce the number of accidents and improve the reliability of any public transit utilizing this roadway.
Implement street improvements that are designed to relieve pressure on a region's most congested roadways and intersections.	**Compliant.** The proposed project would improve the year 2030 LOS along Reche Vista Drive from LOS F to LOS C.
Limit idling time for commercial vehicles, including delivery and construction vehicles.	**Compliant.** The proposed project would improve the LOS along Reche Vista Drive, which would reduce the idling time associated with traffic congestion.
Urban Forestry	
Plant trees and vegetation near structures to shade buildings and reduce energy requirements for heating/cooling.	**Not applicable.**
Preserve or replace onsite trees (that are removed due to development) as a means of providing carbon storage.	**Compliant.** The proposed project would promote the reestablishment of native vegetation in the area adjacent to the realigned roadway with native vegetation.
Green Buildings	
Encourage public and private construction of LEED (Leadership in Energy and Environmental Design) certified (or equivalent) buildings.	**Not applicable.**
Energy Conservation Policies and Actions	
Recognize and promote energy saving measures beyond Title 24 requirements for residential and commercial projects	**Not applicable.**
Where feasible, include in new buildings facilities to support the use of low/zero carbon fueled vehicles, such	**Not applicable.**

Strategy	Project Compliance With Reduction Strategy
as the charging of electric vehicles from green electricity sources.	
Educate the public, schools, other jurisdictions, professional associations, business and industry about reducing GHG emissions.	**Not applicable.**
Replace traffic lights, street lights, and other electrical uses to energy efficient bulbs and appliances.	**Compliant.** The street light included in the proposed project would utilize energy efficient bulbs.
Purchase Energy Star equipment and appliances for public agency use.	**Not applicable.**
Incorporate on-site renewable energy production, including installation of photovoltaic cells or other solar options.	**Not applicable.**
Execute an Energy Savings Performance Contract with a private entity to retrofit public buildings. This type of contract allows the private entity to fund all energy improvements in exchange for a share of the energy savings over a period of time.	**Not applicable.**
Design, build, and operate schools that meet the Collaborative for High Performance Schools (CHPS) best practices.	**Not applicable.**
Retrofit municipal water and wastewater systems with energy efficient motors, pumps and other equipment, and recover wastewater treatment methane for energy production.	**Not applicable.**
Convert landfill gas into energy sources for use in fueling vehicles, operating equipment, and heating buildings.	**Not applicable.**
Purchase government vehicles and buses that use alternatives fuels or technology, such as electric hybrids, biodiesel, and ethanol. Where feasible, require fleet vehicles to be low emission vehicles. Promote the use of these vehicles in the general community.	**Not applicable.**
Offer government incentives to private businesses for developing buildings with energy and water efficient features and recycled materials. The incentives can include expedited plan checks and reduced permit fees.	**Not applicable.**
Offer rebates and low-interest loans to residents that make energy-saving improvements on their homes.	**Not applicable.**
Create bicycle lanes and walking paths directed to the location of schools, parks and other destination points.	**Compliant.** The proposed realigned section of Reche Vista Drive would include a shoulder for bicycle use on the roadway.
Programs to Reduce Vehicle Miles Traveled	
Offer government employees financial incentives to carpool, use public transportation, or use other modes of travel for daily commutes.	**Not applicable.**
Encourage large businesses to develop commute trip reduction plans that encourage employees who commute alone to consider alternative transportation modes.	**Not applicable.**
Develop shuttle systems around business district parking garages to reduce congestion and create shorter commutes.	**Not applicable.**

Strategy	Project Compliance With Reduction Strategy
Create an online ridesharing program that matches potential carpoolers immediately through email	**Not applicable.**
Develop a Safe Routes to School program that allows and promotes bicycling and walking to school.	**Not applicable.**
Programs to Reduce Solid Waste	
Create incentives to increase recycling and reduce generation of solid waste by residential users.	**Not applicable.**
Implement a Construction and Demolition Waste Recycling Ordinance to reduce the solid waste created by new development.	**Compliant.** The proposed project will recycle the excavated material from the proposed project.
Add residential/commercial food waste collection to existing green waste collection programs.	**Not applicable.**
Source: *CEQA AND CLIMATE CHANGE: Addressing Climate Change Through CEQA Review*, prepared by OPR, June 19, 2008.	

Table Q above shows that the proposed project is complaint with the OPR GHG emission reduction strategies. In addition the analysis above has that implementation of the proposed project would provide a reduction in VHT and VMT. Therefore, the proposed project would not create a cumulative contribution to global climate change.

8.0 AIR QUALITY COMPLIANCE

The following section discusses the proposed project's consistency with the SCAQMD AQMP.

8.1 SCAQMD Air Quality Management Plan

The Environmental Protection Agency (EPA) requires a discussion of any inconsistencies between a proposed project and applicable GPs and regional plans. The regional plan that applies to the proposed project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP (except as provided for CO in Section 9.4 for relocating CO hot spots).

(2) Whether the project will exceed the assumptions in the AQMP in 2010 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in the Air Study, short-term construction impacts as well as the long-term operations of the proposed project will not result in significant impacts based on the SCAQMD thresholds of significance. It is unlikely that short-term construction activities will increase the frequency or severity of existing air quality violations due to the relatively small size of the proposed project and the required compliance with SCAQMD Rules and Regulations. In addition, the ongoing operation of the proposed project will generate less air pollutant emissions than compared to the no project alternative. Further, the analysis for long-term local air quality impacts showed that local CO or PM_{10} pollutant concentrations are not projected to exceed the air quality standards.

Therefore, the proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. For this project, the City and County's Circulation Plans defines the assumptions that are represented in the AQMP and included in the RTP and RTIP.

The Reche Vista Drive Realignment Project was included in the regional emissions analysis conducted by the Southern California Association of Governments (SCAG), which is the Regional Transportation Planning Agency (RTPA) for the conforming Moreno Valley/Riverside County portion of the RTIP. The project—Realign Reche Vista Drive (Perris Blvd. to 200 'N/O City Limits – Approx. 2,000' RTIP/FTIP ID: RIV011210) and install signal (Perris/Heacock/Reche Vista Dr. RTIP/FTIP ID: RIV011210) are in the SCAG RTIP dated July 17, 2008. The project's design concept and scope have not changed significantly from what was analyzed in the RTIP (RTIP/FTIP ID: RIV011210). This analysis found that the plan and, therefore, the individual projects contained in the plan, are conforming projects, and will have air quality impacts consistent with those identified in the state implementation plans (SIPs) for achieving the National Ambient Air Quality Standards (NAAQS). FHWA determined the RTP to conform to the SIP on November 17, 2008.

The Reche Vista Drive Realignment project is also included in the RTP RIVO11210 dated May 2008. The project's open to the public year is consistent with (within the same regional emission analysis period as) the construction completion date identified in the federal TIP and/or RTP. The federal TIP gives priority to eligible Transportation Control Measures (TCMs) identified in the SIP and provides sufficient funds to provide for their implementation. FHWA determined the TIP to conform to the SIP on November 17, 2008. The pages of the RTP and RTIP that list the proposed project are included in Appendix E.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, no impact will occur.

9.0 FINDINGS AND RECOMMENDATIONS

9.1 Short-Term Construction Impacts

Construction-Related Regional Air Quality Impacts

The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

Criteria Pollutants

The short-term regional air quality impacts associated with the proposed project were analyzed by the; roadway demolition, grading, trenching, asphalt paving, and signal construction phases of construction which are described below.

Roadway Demolition

The analysis shows that for the roadway demolition activities for the proposed project the VOC, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds of significance discussed above in Section 5.0. Therefore, a less than significant short-term regional air quality impacts would occur during the roadway demolition phase for the proposed project.

Site Clearing and Grading

The analysis shows that for the site clearing and grading activities for the proposed project the VOC, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds of significance discussed above in Section 5.0. Therefore, less than significant short-term regional air quality impacts would occur during the site clearing and grading phase for the proposed project.

Trenching

The analysis shows that for the trenching activities for the proposed project the VOC, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds of significance discussed above in Section 5.0. Therefore, no significant short-term regional air quality impacts would occur during the trenching phase for the proposed project.

Asphalt Paving

The analysis shows that for the asphalt paving activities for the proposed project the VOC, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds of significance discussed above in Section 5.0. Therefore, no significant short-term regional air quality impacts would occur during the asphalt paving phase for the proposed project.

Signal Construction

The analysis shows that for the signal construction activities for the proposed project the VOC, NOx, CO, SOx, PM_{10}, and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds of significance discussed above in Section 5.0. Therefore, less than significant short-term regional air quality impacts would occur during the signal construction phase for the proposed project.

Global Climate Change

The analysis shows that construction-related GHG emissions from the proposed project would create 207.92 metric tons of CO_2e emissions. This would not exceed the SCAQMD Working Group proposed threshold of significance of 10,000 metric tons per year of CO_2e emissions, which has been discussed above in Section 5.0. Therefore, no significant short-term impact to global climate change would be anticipated to occur during construction of the proposed project.

Construction-Related Local Air Quality Impacts

The proposed project has been analyzed for the potential local air quality impacts created from construction-related PM_{10} emissions, toxic air contaminants and from odor impacts**.**

Local Air Quality Impacts

The analysis shows that the maximum off-site local PM_{10} emission level at the nearest sensitive receptor would be 96.2 μg per m^3. The local PM_{10} emissions would exceed the SCAQMD thresholds of significance of 10.4 μg per m^3. Therefore, a significant short-term local air quality impact would occur due to PM_{10} emissions during the grading of the project site.

The PM_{10} emissions would be primarily created through disturbed soil as well as from equipment exhaust. Incorporation of the following Mitigation Measures 1, 2, 3, 4, and 5 would reduce the local PM_{10} emission levels from the grading activities to a less than significant level:

Mitigation Measure 1
The City shall require that the grading contractor apply soil stabilizer (polymer emulsions or organic fluids developed to reduce dust emissions) to inactive areas during the grading phases of the proposed project.

Mitigation Measure 2
The City shall require that the grading contractor water all exposed surfaces, including all haul roads three times per day during the grading phase of the proposed project.

Mitigation Measure 3
The City shall require that the grading contractor to restrict the speed of all construction vehicles operating on-site to less than 15 miles per hour during the grading phase of the proposed project.

Mitigation Measure 4
The City shall require that the grading contractor require all construction workers and construction equipment to drive on the paved portion of Canyon Ranch Road that lies within the future right of way of Reche Vista Drive and that this paved area shall be the last area to be graded.

Mitigation Measure 5
The City shall require that the grading contractor comply with the fugitive dust reduction requirements that are stated in SCAQMD's Rule 403.

Construction-Related Toxic Air Contaminant Impacts

The greatest potential for toxic air contaminant (TAC) emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TAC's over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 70 years) substantial source of TAC emissions and corresponding individual cancer risk. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

Construction-Related Asbestos Impacts

Asbestos may be found in a natural state. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers to the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

According to the *Geotechnical Investigation Reche Vista Drive Realignment Moreno Valley, California,* prepared by KOA Corporation, November 12, 2008, no ultramafic rock deposits were identified during the geotechnical field investigation of the project site. Therefore, no asbestos emissions are anticipated during construction of the proposed project.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are of short-term in nature and the odor emissions are expected cease upon the drying or hardening of the odor producing materials. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project.

9.2 Long-Term Operations Impacts

The operations-related air emissions have been analyzed for the CO_2 hot spots, PM_{10} and $PM_{2.5}$ hotspots, and impacts to global climate change.

CO_2 Hot Spots

The analysis shows that total CO concentrations would not cause or contribute to any new localized violations of the federal 1-hour or 8-hour CO ambient standards.

The NEPA document for this project does not identify specific mitigation, minimization, or avoidance measures for CO. A written commitment to implement such control measures is therefore not required. The Project by its' nature will reduce CO.

The approved RTP and TIP for the project area has no CO mitigation or control measures that relate to the project's construction or operation. Therefore, a written commitment to implement CO control measures is not required.

$PM_{2.5}$/PM_{10} Hot Spots

The analysis above shows that the proposed project is not considered a Project of Air Quality Concern (POAQC) because it does not meet the definition of a POAQC as defined in EPA's Transportation Conformity Guidance (Final Rule), dated March 10, 2006.

Global Climate Change

The analysis above shows that the proposed project is complaint with the OPR GHG emission reduction strategies. In addition the analysis above has that implementation of the proposed project would provide a reduction in VHT and VMT. Therefore, the proposed project would not create a cumulative contribution to global climate change.

9.3 Consistency with the SCAQMD AQMP

The proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards. In addition, the Reche Vista Drive Realignment Project was included in the regional emissions analysis conducted by the Southern California Association of Governments (SCAG), which is the Regional Transportation Planning Agency (RTPA) for the conforming Moreno Valley/Riverside County portion of the RTIP. The project—Realign Reche Vista Drive (Perris Blvd. to 200 'N/O City Limits – Approx. 2,000' RTIP/FTIP ID: RIV011210) and install signal (Perris/Heacock/Reche Vista Dr. RTIP/FTIP ID: RIV011210) are in the SCAG RTIP dated July 17, 2008. The project's design concept and scope have not changed significantly from what was analyzed in the RTIP (RTIP/FTIP ID: RIV011210). This analysis found that the plan and, therefore, the individual projects contained in the plan, are conforming projects, and will have air quality impacts consistent with those identified in the state implementation plans (SIPs) for achieving the National Ambient Air Quality Standards (NAAQS). FHWA determined the RTP to conform to the SIP on November 17, 2008.

The Reche Vista Drive Realignment project is also included in the RTP RIVO11210 dated May, 2008. The project's open to the public year is consistent with (within the same regional emission analysis period as) the construction completion date identified in the federal TIP and/or RTP. The federal TIP gives priority to eligible Transportation Control Measures (TCMs) identified in the SIP and provides sufficient funds to provide for their implementation. FHWA determined the TIP to conform to the SIP on November 17, 2008. Therefore, the proposed project will not result in an inconsistency with the SCAQMD AQMP.

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APPENDIX A

MEASUREMENTS OF CRITERIA POLLUTANTS FOR 2006, 2007, AND 2008

Highest 4 Daily Maximum Hourly Ozone Measurements

Redlands-Dearborn

FAQs

Year:	2006		2007		2008	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jul 15	0.165	Jul 4	0.149	Jun 20	0.154
Second High:	Jul 24	0.165	Jul 2	0.136	Jun 18	0.147
Third High:	Jul 25	0.159	Jul 5	0.136	Jul 4	0.146
Fourth High:	Jun 4	0.157	Jul 6	0.133	Aug 14	0.142
# Days Above State Standard:		62		54		72
California Designation Value:		0.15		0.15		0.15
Expected Peak Day Conc.:		0.150		0.149		0.153
# Days Above Nat'l Standard:		*11*		*7*		*12*
National Design Value:		*0.159*		*0.157*		*0.157*
Year Coverage:		99		99		99

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All concentrations are expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics*.

State exceedances are shown in yellow. Exceedances of the revoked national 1-hour standard are shown in *orange*.

An exceedance is not necessarily a violation.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period.

* There was insufficient (or no) data available to determine the value.

Switch: 8-Hour Ozone | PM10 | PM2.5 | Carbon Monoxide | Nitrogen Dioxide | Sulfur Dioxide | Hydrogen Sulfide

Go to: Data Statistics Home Page | Top 4 Summaries Start Page

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Highest 4 Daily Maximum 8-Hour Ozone Averages

Redlands-Dearborn

FAQs

Year:	2006		2007		2008	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Jul 15	0.135	Jul 5	0.124	Jul 4	0.120
Second High:	Jul 24	0.130	Jul 2	0.119	Aug 14	0.115
Third High:	Jun 4	0.125	Jul 4	0.119	Jun 18	0.114
Fourth High:	Jul 25	0.125	Jul 1	0.112	Jul 3	0.112
California:						
First High:	Jul 15	0.136	Jul 5	0.125	Jul 4	0.121
Second High:	Jul 24	0.131	Jul 2	0.119	Jun 18	0.115
Third High:	Jun 4	0.126	Jul 4	0.119	Aug 14	0.115
Fourth High:	Jul 25	0.126	Jul 1	0.113	Jul 3	0.112
National:						
# Days Above '08 Nat'l Std.:		62		58		75
'08 Nat'l Std. Design Value:		0.119		0.116		0.116
National Year Coverage:		100		99		100
California:						
# Days Above State Standard:		80		79		100
California Designation Value:		0.136		0.131		0.131
Expected Peak Day Conc.:		0.136		0.131		0.134
California Year Coverage:		99		99		99

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All averages are expressed in parts per million.
National exceedances are shown in orange. State exceedances are shown in yellow.
An exceedance is not necessarily a violation.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period.
* There was insufficient (or no) data available to determine the value.

Switch: Hourly Ozone | PM10 | PM2.5 | Carbon Monoxide | Nitrogen Dioxide | Sulfur Dioxide | Hydrogen Sulfide

Go to: Data Statistics Home Page | Top 4 Summaries Start Page

Welcome to California

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Highest 4 Daily Maximum 8-Hour Carbon Monoxide Averages

San Bernardino-4th Street

FAQs

Year:	2006		2007		2008	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Nov 18	2.19	Oct 24	2.27	Nov 23	1.65
Second High:	Nov 23	2.04	Oct 28	2.11	Dec 2	1.64
Third High:	Dec 27	2.03	Feb 4	1.83	Dec 4	1.53
Fourth High:	Jan 12	1.94	Oct 26	1.79	Jan 11	1.43
California:						
First High:	Nov 17	2.19	Oct 24	2.27	Nov 22	1.65
Second High:	Nov 23	2.04	Oct 27	2.11	Dec 1	1.64
Third High:	Dec 26	2.03	Feb 4	1.83	Dec 31	1.63
Fourth High:	Jan 12	1.94	Oct 26	1.79	Dec 3	1.53
# Days Above Nat'l Standard:		0		0		0
# Days Above State Standard:		0		0		0
Year Coverage:		99		96		97

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All averages are expressed in parts per million.
State exceedances are shown in yellow. National exceedances are shown in orange.
An exceedance is not necessarily a violation.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period.
* There was insufficient (or no) data available to determine the value.

Switch: Hourly Ozone | 8-Hour Ozone | PM10 | PM2.5 | Nitrogen Dioxide | Sulfur Dioxide | Hydrogen Sulfide

Go to: Data Statistics Home Page | Top 4 Summaries Start Page

Welcome to California

Air Resources Board

iADAM

Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

San Bernardino-4th Street

FAQs

Year:	2006		2007		2008	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Nov 2	0.088	Oct 25	0.083	Oct 27	0.091
Second High:	Nov 17	0.088	Oct 31	0.083	Nov 19	0.073
Third High:	Nov 7	0.082	Oct 19	0.080	Jun 18	0.070
Fourth High:	Jan 30	0.081	Nov 6	0.075	Oct 28	0.070
# Days Above State Standard:		0		0		0
Annual Average:		0.025		0.024		0.022
Year Coverage:		99		95		97

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All concentrations are expressed in parts per million.
State exceedances are shown in yellow. National exceedances are shown in orange.
An exceedance is not necessarily a violation.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* There was insufficient (or no) data available to determine the value.

Switch: Hourly Ozone | 8-Hour Ozone | PM10 | PM2.5 | Carbon Monoxide | Sulfur Dioxide | Hydrogen Sulfide

Go to: Data Statistics Home Page | Top 4 Summaries Start Page

Highest 4 Daily PM10 Measurements

Redlands-Dearborn

FAQs

Year:	2006		2007		2008	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	May 11	103.0	Oct 21	97.0	Jun 11	58.0
Second High:	May 17	91.0	Apr 12	92.0	Aug 28	57.0
Third High:	Nov 1	79.0	Nov 8	88.0	Jul 17	53.0
Fourth High:	Jun 22	66.0	Jul 5	86.0	Feb 18	51.0
California:						
First High:	May 11	97.0	Oct 21	92.0	Jun 11	55.0
Second High:	May 17	87.0	Apr 12	87.0	Aug 28	54.0
Third High:	Nov 1	74.0	Nov 8	83.0	Jul 17	50.0
Fourth High:	Jun 22	62.0	Jul 5	81.0	Feb 18	49.0
Measured:						
# Days Above Nat'l Standard:		0		0		0
# Days Above State Standard:		10		16		2
Estimated:						
3-Yr Avg # Days Above Nat'l Std:		0.0		0.0		0.0
# Days Above Nat'l Standard:		0.0		0.0		0.0
# Days Above State Standard:		62.7		97.5		12.2
State 3-Yr Maximum Average:		37		38		38
State Annual Average:		34.4		37.5		27.5
National 3-Year Average:		*36*		*36*		*35*
National Annual Average:		*36.5*		*39.7*		*29.1*
Year Coverage:		95		100		100

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All concentrations are expressed in micrograms per cubic meter.
The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics*.
State exceedances are shown in yellow. National exceedances are shown in orange.
An exceedance is not necessarily a violation.
Statistics may include data that are related to an exceptional event.
State and national statistics may differ for the following reasons:
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods.
State and national statistics may therefore be based on different samplers.
State statistics for 1998 and later are based on *local* conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on *local* conditions).
National statistics are based on *standard* conditions.
State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.
3-Year statistics represent the listed year and the 2 years before the listed year.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when

Highest 4 Daily PM2.5 Measurements

San Bernardino-4th Street

FAQs

Year:	2006		2007		2008	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	May 2	55.0	Oct 24	72.1	Feb 18	43.5
Second High:	May 11	49.0	Nov 5	70.7	Mar 1	34.5
Third High:	May 8	47.7	Nov 8	66.1	Sep 12	33.7
Fourth High:	Nov 1	43.0	Nov 17	59.8	May 9	29.1
California:						
First High:	May 2	55.0	Oct 24	72.1	Feb 18	43.5
Second High:	May 11	49.0	Nov 5	70.7	Mar 1	34.5
Third High:	May 8	47.7	Nov 8	66.1	Sep 12	33.7
Fourth High:	Nov 1	43.0	Nov 17	59.8	May 9	29.1
Estimated Days > '06 Nat'l 24-Hr Std:		*		*		*
Measured Days > '06 Nat'l 24-Hr Std:		9		11		1
'06 Nat'l 24-Hr Std Design Value:		55		54		51
'06 Nat'l 24-Hr Std 98th Percentile:		49.0		70.7		34.5
National Annual Std Design Value:		19.0		17.6		16.5
National Annual Average:		17.8		17.8		13.8
State Ann'l Std Designation Value:		*		*		*
State Annual Average:		*		*		*
Year Coverage:		78		78		59

Go Backward One Year | New Top 4 Summary | Go Forward One Year

Notes: All concentrations are expressed in micrograms per cubic meter.
State exceedances are shown in yellow. National exceedances are shown in orange.
An exceedance is not necessarily a violation.
State and national statistics may differ for the following reasons:
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods.
State and national statistics may therefore be based on different samplers.
State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* There was insufficient data available throughout the year to determine the value.

Switch: Hourly Ozone | 8-Hour Ozone | PM10 | Carbon Monoxide | Nitrogen Dioxide | Sulfur Dioxide | Hydrogen Sulfide

Go to: Data Statistics Home Page | Top 4 Summaries Start Page

APPENDIX B

URBEMIS2007 CONSTRUCTION PRINTOUTS

4/24/2009 02:07:07 PM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: Z:\Vista Env\2009\090404-MV Perris Blvd-Reche Vista Dr Realignment\Urbemis\4-22-09.urb924

Project Name: Reche Vista Drive Realignment

Project Location: Riverside County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 11/2/2009-11/20/2009	2.57	18.43	11.28	0.00	2.35	1.21	3.56	0.49	1.12	1.60	1,727.19
Demolition 11/02/2009-11/20/2009	2.57	18.43	11.28	0.00	2.35	1.21	3.56	0.49	1.12	1.60	1,727.19
Fugitive Dust	0.00	0.00	0.00	0.00	2.34	0.00	2.34	0.49	0.00	0.49	0.00
Demo Off Road Diesel	2.52	18.30	9.84	0.00	0.00	1.21	1.21	0.00	1.11	1.11	1,566.22
Demo On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.46
Demo Worker Trips	0.04	0.08	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.50
Time Slice 11/23/2009-12/31/2009	3.25	**27.01**	**14.29**	0.00	**30.01**	1.36	**31.37**	**6.27**	1.25	**7.52**	**2,433.37**
Mass Grading 11/23/2009-	3.25	27.01	14.29	0.00	30.01	1.36	31.37	6.27	1.25	7.52	2,433.37
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	3.18	26.46	12.98	0.00	0.00	1.33	1.33	0.00	1.23	1.23	2,247.32
Mass Grading On Road Diesel	0.03	0.48	0.17	0.00	0.00	0.02	0.02	0.00	0.02	0.02	61.65
Mass Grading Worker Trips	0.04	0.07	1.14	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.40
Time Slice 1/1/2010-4/23/2010 Active	3.07	25.49	13.66	0.00	**30.01**	1.27	31.28	**6.27**	1.17	7.44	2,433.36
Mass Grading 11/23/2009-	3.07	25.49	13.66	0.00	30.01	1.27	31.28	6.27	1.17	7.44	2,433.36
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.03	0.44	0.16	0.00	0.00	0.02	0.02	0.00	0.02	0.02	61.65
Mass Grading Worker Trips	0.03	0.06	1.04	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.39
Time Slice 4/26/2010-5/21/2010 Active	2.09	17.75	9.26	0.00	0.01	0.88	0.89	0.00	0.81	0.81	1,839.03
Trenching 04/26/2010-05/21/2010	2.09	17.75	9.26	0.00	0.01	0.88	0.89	0.00	0.81	0.81	1,839.03
Trenching Off Road Diesel	2.06	17.69	8.22	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,714.64
Trenching Worker Trips	0.03	0.06	1.04	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.39
Time Slice 5/24/2010-6/25/2010 Active	**3.63**	19.98	13.28	**0.01**	0.02	**1.64**	1.67	0.01	**1.51**	1.52	1,955.15
Asphalt 05/24/2010-06/25/2010	3.63	19.98	13.28	0.01	0.02	1.64	1.67	0.01	1.51	1.52	1,955.15
Paving Off-Gas	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.98	18.01	10.28	0.00	0.00	1.57	1.57	0.00	1.44	1.44	1,418.44

Paving On Road Diesel	0.13	1.83	0.65	0.00	0.01	0.07	0.08	0.00	0.07	0.07	256.82
Paving Worker Trips	0.07	0.14	2.35	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.88
Time Slice 6/28/2010-9/1/2010 Active	2.54	13.11	9.54	0.00	0.01	0.77	0.79	0.00	0.71	0.72	1,563.72
Building 06/28/2010-09/01/2010	2.54	13.11	9.54	0.00	0.01	0.77	0.79	0.00	0.71	0.72	1,563.72
Building Off Road Diesel	2.42	12.01	7.64	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,234.44
Building Vendor Trips	0.09	1.05	0.86	0.00	0.01	0.04	0.05	0.00	0.04	0.04	204.89
Building Worker Trips	0.03	0.06	1.04	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.39

Phase Assumptions

Phase: Demolition 11/2/2009 - 11/20/2009 - Default Demolition Description

Building Volume Total (cubic feet): 55750

Building Volume Daily (cubic feet): 5570

On Road Truck Travel (VMT): 1.29

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 11/23/2009 - 4/23/2010 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 8.9

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 14.55

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 4/26/2010 - 5/21/2010 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 5/24/2010 - 6/25/2010 - Default Paving Description

Acres to be Paved: 4.22

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 6/28/2010 - 9/1/2010 - Default Building Construction Description

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

2 Signal Boards (15 hp) operating at a 0.78 load factor for 8 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

4/24/2009 02:07:21 PM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Mitigated Emissions (Pounds/Day)

File Name: Z:\Vista Env\2009\090404-MV Perris Blvd-Reche Vista Dr Realignment\Urbemis\4-22-09.urb924

Project Name: Reche Vista Drive Realignment

Project Location: Riverside County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Mitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 11/2/2009-11/20/2009	2.57	18.43	11.28	0.00	2.35	1.21	3.56	0.49	1.12	1.60	1,727.19
Demolition 11/02/2009-11/20/2009	2.57	18.43	11.28	0.00	2.35	1.21	3.56	0.49	1.12	1.60	1,727.19
Fugitive Dust	0.00	0.00	0.00	0.00	2.34	0.00	2.34	0.49	0.00	0.49	0.00
Demo Off Road Diesel	2.52	18.30	9.84	0.00	0.00	1.21	1.21	0.00	1.11	1.11	1,566.22
Demo On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.46
Demo Worker Trips	0.04	0.08	1.43	0.00	0.01	0.00	0.01	0.00	0.00	0.01	155.50
Time Slice 11/23/2009-12/31/2009	3.25	**27.01**	**14.29**	0.00	2.86	1.36	4.22	0.60	1.25	1.85	**2,433.37**
Mass Grading 11/23/2009-	3.25	27.01	14.29	0.00	2.86	1.36	4.22	0.60	1.25	1.85	2,433.37
Mass Grading Dust	0.00	0.00	0.00	0.00	2.85	0.00	2.85	0.60	0.00	0.60	0.00
Mass Grading Off Road Diesel	3.18	26.46	12.98	0.00	0.00	1.33	1.33	0.00	1.23	1.23	2,247.32
Mass Grading On Road Diesel	0.03	0.48	0.17	0.00	0.00	0.02	0.02	0.00	0.02	0.02	61.65
Mass Grading Worker Trips	0.04	0.07	1.14	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.40
Time Slice 1/1/2010-4/23/2010 Active	3.07	25.49	13.66	0.00	2.86	1.27	4.13	0.60	1.17	1.77	2,433.36
Mass Grading 11/23/2009-	3.07	25.49	13.66	0.00	2.86	1.27	4.13	0.60	1.17	1.77	2,433.36
Mass Grading Dust	0.00	0.00	0.00	0.00	2.85	0.00	2.85	0.60	0.00	0.60	0.00
Mass Grading Off Road Diesel	3.00	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	2,247.32
Mass Grading On Road Diesel	0.03	0.44	0.16	0.00	0.00	0.02	0.02	0.00	0.02	0.02	61.65
Mass Grading Worker Trips	0.03	0.06	1.04	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.39
Time Slice 4/26/2010-5/21/2010 Active	2.09	17.75	9.26	0.00	0.01	0.88	0.89	0.00	0.81	0.81	1,839.03
Trenching 04/26/2010-05/21/2010	2.09	17.75	9.26	0.00	0.01	0.88	0.89	0.00	0.81	0.81	1,839.03
Trenching Off Road Diesel	2.06	17.69	8.22	0.00	0.00	0.88	0.88	0.00	0.81	0.81	1,714.64
Trenching Worker Trips	0.03	0.06	1.04	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.39
Time Slice 5/24/2010-6/25/2010 Active	**3.63**	19.98	13.28	**0.01**	0.02	**1.64**	1.67	0.01	**1.51**	1.52	1,955.15
Asphalt 05/24/2010-06/25/2010	3.63	19.98	13.28	0.01	0.02	1.64	1.67	0.01	1.51	1.52	1,955.15
Paving Off-Gas	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.98	18.01	10.28	0.00	0.00	1.57	1.57	0.00	1.44	1.44	1,418.44

Paving On Road Diesel	0.13	1.83	0.65	0.00	0.01	0.07	0.08	0.00	0.07	0.07	256.82
Paving Worker Trips	0.07	0.14	2.35	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.88
Time Slice 6/28/2010-9/1/2010 Active	2.54	13.11	9.54	0.00	0.01	0.77	0.79	0.00	0.71	0.72	1,563.72
Building 06/28/2010-09/01/2010	2.54	13.11	9.54	0.00	0.01	0.77	0.79	0.00	0.71	0.72	1,563.72
Building Off Road Diesel	2.42	12.01	7.64	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,234.44
Building Vendor Trips	0.09	1.05	0.86	0.00	0.01	0.04	0.05	0.00	0.04	0.04	204.89
Building Worker Trips	0.03	0.06	1.04	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.39

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 11/23/2009 - 4/23/2010 - Default Mass Site Grading/Excavation

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

Phase Assumptions

Phase: Demolition 11/2/2009 - 11/20/2009 - Default Demolition Description

Building Volume Total (cubic feet): 55750

Building Volume Daily (cubic feet): 5570

On Road Truck Travel (VMT): 1.29

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Mass Grading 11/23/2009 - 4/23/2010 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 8.9

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 14.55

4/24/2009 02:07:21 PM

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 4/26/2010 - 5/21/2010 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 5/24/2010 - 6/25/2010 - Default Paving Description

Acres to be Paved: 4.22

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 6/28/2010 - 9/1/2010 - Default Building Construction Description

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

2 Signal Boards (15 hp) operating at a 0.78 load factor for 8 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

4/24/2009 03:14:41 PM

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: Z:\Vista Env\2009\090404-MV Perris Blvd-Reche Vista Dr Realignment\Urbemis\4-22-09.urb924

Project Name: Reche Vista Drive Realignment

Project Location: Riverside County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (tons/year unmitigated)	0.07	0.53	0.29	0.00	0.45	0.03	0.48	0.09	0.03	0.12	48.24
2009 TOTALS (tons/year mitigated)	0.07	0.53	0.29	0.00	0.06	0.03	0.09	0.01	0.03	0.04	48.24
Percent Reduction	0.00	0.00	0.00	0.00	86.94	0.00	81.75	86.93	0.00	67.92	0.00
2010 TOTALS (tons/year unmitigated)	0.25	1.77	1.04	0.00	1.22	0.10	1.32	0.25	0.09	0.35	178.91
2010 TOTALS (tons/year mitigated)	0.25	1.77	1.04	0.00	0.12	0.10	0.22	0.02	0.09	0.12	178.91
Percent Reduction	0.00	0.00	0.00	0.00	90.41	0.00	83.58	90.36	0.00	66.46	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.02	0.00	0.28	0.00	0.00	0.00	1.97

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.00	0.00	0.02	0.00	0.00	0.00	1.69

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.02	0.00	0.30	0.00	0.00	0.00	3.66

APPENDIX C

MITIGATED ISCST3 LOCAL CONSTRUCTION PM_{10} EMISSIONS PRINTOUTS

```
**
****************************************
**
** ISCST3 Input Produced by:
** AERMOD View Ver. 6.2.0
** Lakes Environmental Software Inc.
** Date: 4/24/2009
** File: C:\Vista Env\ISCST3\Reche4\Reche4.INP
**
****************************************
**
**
****************************************
** ISCST3 Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE Reche Vista Drive Realignment
   TITLETWO Grading PM10 1st highest emissions
   MODELOPT CONC DRYDPLT  URBAN NOCALM
   AVERTIME 24
   POLLUTID 1STPM10
   TERRHGTS FLAT
   RUNORNOT RUN
CO FINISHED
**
****************************************
** ISCST3 Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION GRADINGW AREAPOLY 240.071 429.124
** DESCRSRC Grading west
   LOCATION GRADINGE AREAPOLY 254.301 444.404
** DESCRSRC Grading east
** Source Parameters **
   SRCPARAM GRADINGW 1.099E-5 3.960 19 3.960
   AREAVERT GRADINGW 240.071 429.124 241.461 440.587 242.891 454.281
   AREAVERT GRADINGW 244.974 473.322 245.074 486.066 237.748 489.964
   AREAVERT GRADINGW 238.205 507.453 243.484 517.825 245.726 534.898
   AREAVERT GRADINGW 246.630 547.513 226.383 547.954 222.119 534.839
   AREAVERT GRADINGW 230.180 500.563 225.073 472.472 208.613 456.989
   AREAVERT GRADINGW 193.573 420.371 207.241 406.135 245.319 404.996
   AREAVERT GRADINGW 240.864 415.285
   SRCPARAM GRADINGE 1.099E-5 3.960 17 3.960
   AREAVERT GRADINGE 254.301 444.404 257.120 453.066 255.298 459.606
   AREAVERT GRADINGE 255.138 478.586 265.816 488.096 268.294 502.733
   AREAVERT GRADINGE 268.810 508.046 273.057 516.969 259.096 519.291
   AREAVERT GRADINGE 260.672 547.137 255.016 547.260 253.354 521.303
   AREAVERT GRADINGE 249.670 507.465 252.362 497.253 253.456 477.051
   AREAVERT GRADINGE 253.382 465.768 253.535 451.388
** Variable Emissions Type: "By Hour-of-Day"
** Variable Emission Scenario: "Scenario 1"
   EMISFACT GRADINGE HROFDY 0 0 0 0 0 0
   EMISFACT GRADINGE HROFDY 1 1 1 1 1 1
   EMISFACT GRADINGE HROFDY 1 1 0 0 0 0
   EMISFACT GRADINGE HROFDY 0 0 0 0 0 0
   EMISFACT GRADINGW HROFDY 0 0 0 0 0 0
   EMISFACT GRADINGW HROFDY 1 1 1 1 1 1
   EMISFACT GRADINGW HROFDY 1 1 0 0 0 0
   EMISFACT GRADINGW HROFDY 0 0 0 0 0 0
   PARTDIAM GRADINGW 1 2.5 10
   PARTDIAM GRADINGE 1 2.5 10
   MASSFRAX GRADINGW 0.0787 0.1292 0.7922
   MASSFRAX GRADINGE 0.0787 0.1292 0.7922
   PARTDENS GRADINGW 2.3 2.3 2.3
   PARTDENS GRADINGE 2.3 2.3 2.3
   SRCGROUP ALL
SO FINISHED
**
****************************************
** ISCST3 Receptor Pathway
****************************************
**
**
RE STARTING
** DESCRREC "" ""
   DISCCART       270.42       466.97
   DISCCART       386.23       404.12
   DISCCART       387.90       552.11
   DISCCART       351.40       753.95
** BEGIN OF FENCELINE GRID RECEPTORS
** Plant Boundary Name PLBN1
** Grid Spacing = 100.00
** No. of Tiers = 1
** Tier 1: Segment Distance = 500.00
** Tier 1: Tier Spacing = 100.00
** ----------
   DISCCART       367.15       731.12
   DISCCART       467.14       732.46
   DISCCART       567.13       733.79
   DISCCART       667.12       735.12
   DISCCART       767.12       736.46
   DISCCART       365.43       598.25
   DISCCART       465.36       594.67
   DISCCART       565.30       591.10
   DISCCART       665.23       587.52
   DISCCART       765.17       583.94
   DISCCART       559.05       499.30
   DISCCART       658.80       492.31
   DISCCART       758.56       485.33
   DISCCART       324.71       813.13
   DISCCART       346.35       910.76
   DISCCART       367.99      1008.39
```

DISCCART	367.55	481.80
DISCCART	458.87	479.66
DISCCART	542.50	378.92
DISCCART	466.65	827.54
DISCCART	648.25	375.92
DISCCART	739.66	372.50
DISCCART	611.73	832.02
DISCCART	535.22	889.76
DISCCART	458.71	947.50
DISCCART	348.61	382.82
DISCCART	447.87	370.67
DISCCART	638.03	271.86
DISCCART	736.35	253.61
DISCCART	349.64	233.78
DISCCART	449.52	229.03
DISCCART	549.41	224.28
DISCCART	645.23	159.85
DISCCART	744.98	152.88
DISCCART	344.72	122.61
DISCCART	439.22	91.05
DISCCART	533.62	58.51
DISCCART	627.98	25.66
DISCCART	722.25	-8.16
DISCCART	513.75	-30.40
DISCCART	605.58	-69.99
DISCCART	697.41	-109.59
DISCCART	331.13	29.10
DISCCART	426.90	0.32
DISCCART	210.15	-109.11
DISCCART	292.90	-64.37
DISCCART	186.86	-204.48
DISCCART	277.96	-194.96
DISCCART	366.17	-120.77
DISCCART	160.67	-300.15
DISCCART	258.28	-289.95
DISCCART	376.55	-254.39
DISCCART	438.53	-178.29
DISCCART	130.15	-396.27
DISCCART	221.25	-386.75
DISCCART	312.35	-377.23
DISCCART	422.74	-344.04
DISCCART	480.58	-273.02
DISCCART	538.43	-202.00
DISCCART	103.06	-492.03
DISCCART	197.96	-482.12
DISCCART	292.86	-472.21
DISCCART	387.75	-462.29
DISCCART	491.19	-406.36
DISCCART	551.45	-332.38
DISCCART	611.70	-258.40
DISCCART	90.52	-32.88
DISCCART	-9.36	-27.96
DISCCART	44.72	-141.15
DISCCART	-109.24	-23.04
DISCCART	-81.76	-117.22

DISCCART	-36.84	-199.01
DISCCART	42.97	-256.06
DISCCART	-209.12	-18.12
DISCCART	-181.64	-112.30
DISCCART	-154.16	-206.47
DISCCART	-91.79	-275.89
DISCCART	-11.99	-332.94
DISCCART	-307.98	-16.69
DISCCART	-277.44	-121.33
DISCCART	-246.91	-225.96
DISCCART	-197.00	-316.85
DISCCART	-108.32	-380.24
DISCCART	-19.65	-443.63
DISCCART	42.71	48.14
DISCCART	-56.58	59.99
DISCCART	-155.88	71.83
DISCCART	-255.17	83.68
DISCCART	-348.15	72.69
DISCCART	99.35	143.74
DISCCART	81.21	242.09
DISCCART	-14.16	168.92
DISCCART	57.60	337.44
DISCCART	-41.02	283.59
DISCCART	-105.54	197.74
DISCCART	41.03	436.63
DISCCART	-52.90	385.35
DISCCART	-161.89	301.73
DISCCART	-207.10	204.73
DISCCART	19.96	533.37
DISCCART	-82.77	477.28
DISCCART	-185.50	421.18
DISCCART	-252.71	331.76
DISCCART	-302.15	225.67
DISCCART	-246.68	489.63
DISCCART	116.03	495.87
DISCCART	-68.28	573.52
DISCCART	-175.84	575.80
DISCCART	-271.88	579.13
DISCCART	86.64	617.52
DISCCART	-10.53	657.28
DISCCART	-79.59	729.60
DISCCART	-149.93	800.07
DISCCART	-201.26	725.63
DISCCART	99.41	710.14
DISCCART	18.66	768.22
DISCCART	-49.63	841.21
DISCCART	-117.89	914.26
DISCCART	196.11	866.86
DISCCART	140.76	794.93
DISCCART	179.57	965.48
DISCCART	95.96	915.30
DISCCART	160.41	1062.53
DISCCART	66.35	1006.08
DISCCART	-11.81	937.39
DISCCART	144.58	1161.58

```
   DISCCART        53.37      1106.84
   DISCCART       -37.84      1052.10
   DISCCART       128.44      1260.45
   DISCCART        38.86      1206.68
   DISCCART       -50.72      1152.92
   DISCCART      -140.30      1099.15
   DISCCART      -184.46      1010.44
   DISCCART      -213.49       910.08
   DISCCART      -242.52       809.72
   DISCCART       257.44      1069.95
   DISCCART       554.23      1012.89
   DISCCART       450.86      1117.11
   DISCCART       348.44      1142.21
   DISCCART       246.01      1167.32
   DISCCART       733.47       883.59
   DISCCART       684.58       969.52
   DISCCART       635.69      1055.45
   DISCCART       586.80      1141.38
   DISCCART       514.34      1196.12
   DISCCART       418.32      1219.65
   DISCCART       322.29      1243.19
   DISCCART       226.27      1266.72
** END OF FENCELINE GRID RECEPTORS
** Discrete Cartesian Plant Boundary - Primary Receptors
** Plant Boundary Name PLBN1
** DESCRREC "FENCEPRI" "Cartesian plant boundary Primary Receptors"
   DISCCART       233.56       780.78
   DISCCART       235.79       756.82
   DISCCART       239.82       666.76
   DISCCART       241.41       639.95
   DISCCART       235.82       563.88
   DISCCART       228.39       556.95
   DISCCART       221.37       534.48
   DISCCART       229.76       500.51
   DISCCART       224.75       472.86
   DISCCART       208.18       457.04
   DISCCART       192.78       420.49
   DISCCART       216.31       395.75
   DISCCART       218.85       336.11
   DISCCART       215.25       329.16
   DISCCART       215.81       296.73
   DISCCART       200.98       266.92
   DISCCART       194.28       134.02
   DISCCART       203.19       122.65
   DISCCART       192.00        96.97
   DISCCART       185.44        67.84
   DISCCART       144.88        60.36
   DISCCART       142.01        36.30
   DISCCART       183.07        30.74
   DISCCART       181.24        -6.41
   DISCCART       213.20       -15.86
   DISCCART       235.36        57.88
   DISCCART       238.27        88.39
   DISCCART       246.26       106.92
   DISCCART       244.44       130.90
   DISCCART       249.17       144.34
   DISCCART       246.99       161.41
   DISCCART       246.20       187.75
   DISCCART       249.75       238.53
   DISCCART       253.94       326.67
   DISCCART       244.75       344.88
   DISCCART       251.12       379.19
   DISCCART       249.35       394.98
   DISCCART       253.22       426.58
   DISCCART       255.27       444.50
   DISCCART       257.83       453.82
   DISCCART       261.81       484.80
   DISCCART       273.99       517.09
   DISCCART       259.78       520.24
   DISCCART       265.49       601.83
   DISCCART       267.95       670.54
   DISCCART       267.16       729.79
   DISCCART       260.98       785.38
RE FINISHED
**
****************************************
** ISCST3 Meteorology Pathway
****************************************
**
**
ME STARTING
   INPUTFIL C:\VISTAE~1\ISCST3\Redlands\redlands.dep
   ANEMHGHT 20 METERS
   SURFDATA 54161 1981 Redlands
   UAIRDATA 99999 1981
ME FINISHED
**
****************************************
** ISCST3 Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 24 ALL 1ST RECHE4.IS\24H1GALL.PLT
OU FINISHED

***********************************
*** SETUP Finishes Successfully ***
***********************************
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE   1
CONC                    URBAN FLAT
NOCALM               DRYDPL

                                           ***     MODEL SETUP OPTIONS
SUMMARY       ***
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

**Intermediate Terrain Processing is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

  --  SCAVENGING/DEPOSITION LOGIC --
**Model Uses DRY DEPLETION.  DDPLETE =  T
**Model Uses NO WET DEPLETION.  WDPLETE =  F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses URBAN Dispersion.

**Model Uses User-Specified Options:
           1. Final Plume Rise.
           2. Stack-tip Downwash.
           3. Buoyancy-induced Dispersion.
           4. Not Use Calms Processing Routine.
           5. Not Use Missing Data Processing Routine.
           6. Default Wind Profile Exponents.
           7. Default Vertical Potential Temperature Gradients.

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates  1 Short Term Average(s) of:  24-HR

**This Run Includes:     2 Source(s);      1 Source Group(s); and     199
Receptor(s)

**The Model Assumes A Pollutant Type of:  1STPM10

**Model Set To Continue RUNning After the Setup Testing.

**Output Options Selected:
         Model Outputs Tables of Highest Short Term Values by Receptor
(RECTABLE Keyword)
         Model Outputs External File(s) of High Values for Plotting
(PLOTFILE Keyword)

**Misc. Inputs:  Anem. Hgt. (m) =    20.00 ;    Decay Coef. =    0.000     ;
Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                ;
Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =     1.2 MB of RAM.

**Input Runstream File:          Reche4.INP
**Output Print File:             Reche4.OUT
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE   2
CONC                    URBAN FLAT
NOCALM               DRYDPL


                                                   *** AREAPOLY SOURCE DATA ***

             NUMBER EMISSION RATE   LOCATION OF AREA  BASE     RELEASE
NUMBER      INIT.   EMISSION RATE
   SOURCE     PART.  (GRAMS/SEC       X        Y      ELEV.    HEIGHT  OF
VERTS.     SZ      SCALAR VARY
     ID       CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)
(METERS)       BY
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

  GRADINGW      3   0.10990E-04     240.1     429.1     0.0     3.96      19
3.96      HROFDY
  GRADINGE      3   0.10990E-04     254.3     444.4     0.0     3.96      17
3.96      HROFDY
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE   3
CONC                    URBAN FLAT
NOCALM               DRYDPL


                                          *** SOURCE IDs DEFINING SOURCE
GROUPS ***

GROUP ID                                                  SOURCE IDs



 ALL       GRADINGW, GRADINGE,
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE   4
CONC                    URBAN FLAT
NOCALM               DRYDPL

                                               *** SOURCE PARTICULATE/GAS
DATA ***



         *** SOURCE ID = GRADINGW; SOURCE TYPE = AREAPOLY ***

         MASS FRACTION =
           0.07870,   0.12920,   0.79220,

         PARTICLE DIAMETER (MICRONS) =
           1.00000,   2.50000,  10.00000,

         PARTICLE DENSITY (G/CM**3) =
           2.30000,   2.30000,   2.30000,


         *** SOURCE ID = GRADINGE; SOURCE TYPE = AREAPOLY ***

         MASS FRACTION =
           0.07870,   0.12920,   0.79220,

         PARTICLE DIAMETER (MICRONS) =
           1.00000,   2.50000,  10.00000,

         PARTICLE DENSITY (G/CM**3) =
           2.30000,   2.30000,   2.30000,
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE   5
CONC                    URBAN FLAT
NOCALM               DRYDPL

                           * SOURCE EMISSION RATE SCALARS WHICH VARY FOR
EACH HOUR OF THE DAY *


    HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR
SCALAR      HOUR    SCALAR      HOUR    SCALAR
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - -


SOURCE ID = GRADINGW ;  SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4
.00000E+00      5   .00000E+00      6   .00000E+00
      7   .10000E+01      8   .10000E+01      9   .10000E+01     10
.10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .00000E+00     16
.00000E+00     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22
.00000E+00     23   .00000E+00     24   .00000E+00


SOURCE ID = GRADINGE ;  SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4
.00000E+00      5   .00000E+00      6   .00000E+00
      7   .10000E+01      8   .10000E+01      9   .10000E+01     10
.10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .00000E+00     16
.00000E+00     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22
.00000E+00     23   .00000E+00     24   .00000E+00
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE   6
CONC                    URBAN FLAT
NOCALM               DRYDPL

                                            *** DISCRETE CARTESIAN RECEPTORS
***
                                              (X-COORD, Y-COORD, ZELEV,
ZFLAG)
                                                          (METERS)

    (    270.4,     467.0,       0.0,       0.0);         (    386.2,
404.1,       0.0,       0.0);
    (    387.9,     552.1,       0.0,       0.0);         (    351.4,
754.0,       0.0,       0.0);
    (    367.1,     731.1,       0.0,       0.0);         (    467.1,
732.5,       0.0,       0.0);
    (    567.1,     733.8,       0.0,       0.0);         (    667.1,
735.1,       0.0,       0.0);
    (    767.1,     736.5,       0.0,       0.0);         (    365.4,
598.3,       0.0,       0.0);
    (    465.4,     594.7,       0.0,       0.0);         (    565.3,
591.1,       0.0,       0.0);
    (    665.2,     587.5,       0.0,       0.0);         (    765.2,
583.9,       0.0,       0.0);
    (    559.0,     499.3,       0.0,       0.0);         (    658.8,
492.3,       0.0,       0.0);
    (    758.6,     485.3,       0.0,       0.0);         (    324.7,
813.1,       0.0,       0.0);
    (    346.4,     910.8,       0.0,       0.0);         (    368.0,
1008.4,       0.0,       0.0);
    (    367.5,     481.8,       0.0,       0.0);         (    458.9,
479.7,       0.0,       0.0);
    (    542.5,     378.9,       0.0,       0.0);         (    466.6,
827.5,       0.0,       0.0);
    (    648.3,     375.9,       0.0,       0.0);         (    739.7,
372.5,       0.0,       0.0);
    (    611.7,     832.0,       0.0,       0.0);         (    535.2,
889.8,       0.0,       0.0);
    (    458.7,     947.5,       0.0,       0.0);         (    348.6,
382.8,       0.0,       0.0);
    (    447.9,     370.7,       0.0,       0.0);         (    638.0,
271.9,       0.0,       0.0);
    (    736.3,     253.6,       0.0,       0.0);         (    349.6,
233.8,       0.0,       0.0);
    (    449.5,     229.0,       0.0,       0.0);         (    549.4,
224.3,       0.0,       0.0);
    (    645.2,     159.9,       0.0,       0.0);         (    745.0,
152.9,       0.0,       0.0);
```

```
    (    344.7,     122.6,       0.0,       0.0);         (    439.2,
91.1,       0.0,       0.0);
    (    533.6,      58.5,       0.0,       0.0);         (    628.0,
25.7,       0.0,       0.0);
    (    722.3,      -8.2,       0.0,       0.0);         (    513.8,    -
30.4,       0.0,       0.0);
    (    605.6,     -70.0,       0.0,       0.0);         (    697.4,    -
109.6,       0.0,       0.0);
    (    331.1,      29.1,       0.0,       0.0);         (    426.9,
0.3,       0.0,       0.0);
    (    210.1,    -109.1,       0.0,       0.0);         (    292.9,    -
64.4,       0.0,       0.0);
    (    186.9,    -204.5,       0.0,       0.0);         (    278.0,    -
195.0,       0.0,       0.0);
    (    366.2,    -120.8,       0.0,       0.0);         (    160.7,    -
300.1,       0.0,       0.0);
    (    258.3,    -290.0,       0.0,       0.0);         (    376.5,    -
254.4,       0.0,       0.0);
    (    438.5,    -178.3,       0.0,       0.0);         (    130.1,    -
396.3,       0.0,       0.0);
    (    221.3,    -386.8,       0.0,       0.0);         (    312.4,    -
377.2,       0.0,       0.0);
    (    422.7,    -344.0,       0.0,       0.0);         (    480.6,    -
273.0,       0.0,       0.0);
    (    538.4,    -202.0,       0.0,       0.0);         (    103.1,    -
492.0,       0.0,       0.0);
    (    198.0,    -482.1,       0.0,       0.0);         (    292.9,    -
472.2,       0.0,       0.0);
    (    387.8,    -462.3,       0.0,       0.0);         (    491.2,    -
406.4,       0.0,       0.0);
    (    551.5,    -332.4,       0.0,       0.0);         (    611.7,    -
258.4,       0.0,       0.0);
    (     90.5,     -32.9,       0.0,       0.0);         (     -9.4,    -
28.0,       0.0,       0.0);
    (     44.7,    -141.1,       0.0,       0.0);         (   -109.2,    -
23.0,       0.0,       0.0);
    (    -81.8,    -117.2,       0.0,       0.0);         (    -36.8,    -
199.0,       0.0,       0.0);
    (     43.0,    -256.1,       0.0,       0.0);         (   -209.1,    -
18.1,       0.0,       0.0);
    (   -181.6,    -112.3,       0.0,       0.0);         (   -154.2,    -
206.5,       0.0,       0.0);
    (    -91.8,    -275.9,       0.0,       0.0);         (    -12.0,    -
332.9,       0.0,       0.0);
    (   -308.0,     -16.7,       0.0,       0.0);         (   -277.4,    -
121.3,       0.0,       0.0);
    (   -246.9,    -226.0,       0.0,       0.0);         (   -197.0,    -
316.9,       0.0,       0.0);
    (   -108.3,    -380.2,       0.0,       0.0);         (    -19.6,    -
443.6,       0.0,       0.0);
    (     42.7,      48.1,       0.0,       0.0);         (    -56.6,
60.0,       0.0,       0.0);
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE   7
CONC                    URBAN FLAT
NOCALM               DRYDPL

                                            *** DISCRETE CARTESIAN RECEPTORS
***
                                              (X-COORD, Y-COORD, ZELEV,
ZFLAG)
                                                          (METERS)

    (   -155.9,      71.8,       0.0,       0.0);         (   -255.2,
83.7,       0.0,       0.0);
    (   -348.1,      72.7,       0.0,       0.0);         (     99.3,
143.7,       0.0,       0.0);
    (     81.2,     242.1,       0.0,       0.0);         (    -14.2,
168.9,       0.0,       0.0);
    (     57.6,     337.4,       0.0,       0.0);         (    -41.0,
283.6,       0.0,       0.0);
    (   -105.5,     197.7,       0.0,       0.0);         (     41.0,
436.6,       0.0,       0.0);
    (    -52.9,     385.4,       0.0,       0.0);         (   -161.9,
301.7,       0.0,       0.0);
    (   -207.1,     204.7,       0.0,       0.0);         (     20.0,
533.4,       0.0,       0.0);
    (    -82.8,     477.3,       0.0,       0.0);         (   -185.5,
421.2,       0.0,       0.0);
    (   -252.7,     331.8,       0.0,       0.0);         (   -302.1,
225.7,       0.0,       0.0);
    (   -246.7,     489.6,       0.0,       0.0);         (    116.0,
495.9,       0.0,       0.0);
    (    -68.3,     573.5,       0.0,       0.0);         (   -175.8,
575.8,       0.0,       0.0);
    (   -271.9,     579.1,       0.0,       0.0);         (     86.6,
617.5,       0.0,       0.0);
    (    -10.5,     657.3,       0.0,       0.0);         (    -79.6,
729.6,       0.0,       0.0);
    (   -149.9,     800.1,       0.0,       0.0);         (   -201.3,
725.6,       0.0,       0.0);
    (     99.4,     710.1,       0.0,       0.0);         (     18.7,
768.2,       0.0,       0.0);
    (    -49.6,     841.2,       0.0,       0.0);         (   -117.9,
914.3,       0.0,       0.0);
    (    196.1,     866.9,       0.0,       0.0);         (    140.8,
794.9,       0.0,       0.0);
    (    179.6,     965.5,       0.0,       0.0);         (     96.0,
915.3,       0.0,       0.0);
    (    160.4,    1062.5,       0.0,       0.0);         (     66.3,
1006.1,       0.0,       0.0);

    (    -11.8,     937.4,       0.0,       0.0);         (    144.6,
1161.6,       0.0,       0.0);
    (     53.4,    1106.8,       0.0,       0.0);         (    -37.8,
1052.1,       0.0,       0.0);
    (    128.4,    1260.4,       0.0,       0.0);         (     38.9,
1206.7,       0.0,       0.0);
    (    -50.7,    1152.9,       0.0,       0.0);         (   -140.3,
1099.2,       0.0,       0.0);
    (   -184.5,    1010.4,       0.0,       0.0);         (   -213.5,
910.1,       0.0,       0.0);
    (   -242.5,     809.7,       0.0,       0.0);         (    257.4,
1069.9,       0.0,       0.0);
    (    554.2,    1012.9,       0.0,       0.0);         (    450.9,
1117.1,       0.0,       0.0);
    (    348.4,    1142.2,       0.0,       0.0);         (    246.0,
1167.3,       0.0,       0.0);
    (    733.5,     883.6,       0.0,       0.0);         (    684.6,
969.5,       0.0,       0.0);
    (    635.7,    1055.4,       0.0,       0.0);         (    586.8,
1141.4,       0.0,       0.0);
    (    514.3,    1196.1,       0.0,       0.0);         (    418.3,
1219.7,       0.0,       0.0);
    (    322.3,    1243.2,       0.0,       0.0);         (    226.3,
1266.7,       0.0,       0.0);
    (    233.6,     780.8,       0.0,       0.0);         (    235.8,
756.8,       0.0,       0.0);
    (    239.8,     666.8,       0.0,       0.0);         (    241.4,
640.0,       0.0,       0.0);
    (    235.8,     563.9,       0.0,       0.0);         (    228.4,
557.0,       0.0,       0.0);
    (    221.4,     534.5,       0.0,       0.0);         (    229.8,
500.5,       0.0,       0.0);
    (    224.8,     472.9,       0.0,       0.0);         (    208.2,
457.0,       0.0,       0.0);
    (    192.8,     420.5,       0.0,       0.0);         (    216.3,
395.8,       0.0,       0.0);
    (    218.9,     336.1,       0.0,       0.0);         (    215.3,
329.2,       0.0,       0.0);
    (    215.8,     296.7,       0.0,       0.0);         (    201.0,
266.9,       0.0,       0.0);
    (    194.3,     134.0,       0.0,       0.0);         (    203.2,
122.7,       0.0,       0.0);
    (    192.0,      97.0,       0.0,       0.0);         (    185.4,
67.8,       0.0,       0.0);
    (    144.9,      60.4,       0.0,       0.0);         (    142.0,
36.3,       0.0,       0.0);
    (    183.1,      30.7,       0.0,       0.0);         (    181.2,
-6.4,       0.0,       0.0);
    (    213.2,     -15.9,       0.0,       0.0);         (    235.4,
57.9,       0.0,       0.0);
    (    238.3,      88.4,       0.0,       0.0);         (    246.3,
106.9,       0.0,       0.0);
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE   8
CONC                     URBAN FLAT
NOCALM                DRYDPL


                                            *** DISCRETE CARTESIAN RECEPTORS
***
                                              (X-COORD, Y-COORD, ZELEV,
ZFLAG)
                                                          (METERS)

    (    244.4,     130.9,       0.0,       0.0);          (    249.2,
144.3,       0.0,       0.0);
    (    247.0,     161.4,       0.0,       0.0);          (    246.2,
187.8,       0.0,       0.0);
    (    249.8,     238.5,       0.0,       0.0);          (    253.9,
326.7,       0.0,       0.0);
    (    244.8,     344.9,       0.0,       0.0);          (    251.1,
379.2,       0.0,       0.0);
    (    249.4,     395.0,       0.0,       0.0);          (    253.2,
426.6,       0.0,       0.0);
    (    255.3,     444.5,       0.0,       0.0);          (    257.8,
453.8,       0.0,       0.0);
    (    261.8,     484.8,       0.0,       0.0);          (    274.0,
517.1,       0.0,       0.0);
    (    259.8,     520.2,       0.0,       0.0);          (    265.5,
601.8,       0.0,       0.0);
    (    268.0,     670.5,       0.0,       0.0);          (    267.2,
729.8,       0.0,       0.0);
    (    261.0,     785.4,       0.0,       0.0);
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE   9
CONC                     URBAN FLAT
NOCALM                DRYDPL


                                            *** METEOROLOGICAL DAYS SELECTED
FOR PROCESSING ***
                                                                (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

               NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO
DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.


                                 *** UPPER BOUND OF FIRST THROUGH FIFTH WIND
SPEED CATEGORIES ***
                                                         (METERS/SEC)

                                              1.54,   3.09,   5.14,
8.23,  10.80,


                                                   *** WIND PROFILE EXPONENTS
***


               STABILITY                                WIND SPEED CATEGORY
               CATEGORY         1              2              3
4              5               6
                  A           .15000E+00     .15000E+00     .15000E+00
.15000E+00     .15000E+00     .15000E+00
                  B           .15000E+00     .15000E+00     .15000E+00
.15000E+00     .15000E+00     .15000E+00
```

```
               C          .20000E+00     .20000E+00     .20000E+00
.20000E+00     .20000E+00     .20000E+00
               D          .25000E+00     .25000E+00     .25000E+00
.25000E+00     .25000E+00     .25000E+00
               E          .30000E+00     .30000E+00     .30000E+00
.30000E+00     .30000E+00     .30000E+00
               F          .30000E+00     .30000E+00     .30000E+00
.30000E+00     .30000E+00     .30000E+00


                                              *** VERTICAL POTENTIAL TEMPERATURE
GRADIENTS ***
                                                         (DEGREES KELVIN PER
METER)

               STABILITY                                 WIND SPEED CATEGORY
               CATEGORY         1              2              3
4              5              6
               A          .00000E+00     .00000E+00     .00000E+00
.00000E+00     .00000E+00     .00000E+00
               B          .00000E+00     .00000E+00     .00000E+00
.00000E+00     .00000E+00     .00000E+00
               C          .00000E+00     .00000E+00     .00000E+00
.00000E+00     .00000E+00     .00000E+00
               D          .00000E+00     .00000E+00     .00000E+00
.00000E+00     .00000E+00     .00000E+00
               E          .20000E-01     .20000E-01     .20000E-01
.20000E-01     .20000E-01     .20000E-01
               F          .35000E-01     .35000E-01     .35000E-01
.35000E-01     .35000E-01     .35000E-01
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE  10
CONC                    URBAN FLAT
NOCALM                 DRYDPL


                    *** THE FIRST  24 HOURS OF METEOROLOGICAL DATA ***

     FILE:   C:\VISTAE~1\ISCST3\Redlands\redlands.dep
     FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)
     SURFACE STATION NO.:  54161                    UPPER AIR STATION NO.:
99999
                    NAME: REDLANDS                                    NAME:
UNKNOWN
                    YEAR:   1981                                      YEAR:
1981

             FLOW   SPEED  TEMP  STAB  MIXING HEIGHT (M)  USTAR  M-O LENGTH
Z-0 IPCODE PRATE
YR MN DY HR VECTOR  (M/S)   (K)  CLASS   RURAL   URBAN    (M/S)     (M)
(M)       (mm/HR)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
81 01 01 01  292.3   1.00  284.3   7     522.6   170.0    0.0476       4.5
0.1500   0   0.00
81 01 01 02  282.4   0.00  284.3   7     507.0   170.0    0.0476       4.5
0.1500   0   0.00
81 01 01 03  287.5   0.00  283.1   7     491.4   170.0    0.0476       4.5
0.1500   0   0.00
81 01 01 04  301.0   0.00  283.1   7     475.8   170.0    0.0476       4.5
0.1500   0   0.00
81 01 01 05  286.5   0.00  282.6   7     460.3   170.0    0.0476       4.5
0.1500   0   0.00
81 01 01 06  297.0   0.00  283.1   7     444.7   170.0    0.0476       4.5
0.1500   0   0.00
81 01 01 07  297.0   0.00  285.4   6       1.4   170.7    0.0476       6.4
0.1500   0   0.00
81 01 01 08  314.6   1.00  287.6   5      47.0   192.0    0.1172     -18.8
0.1500   0   0.00
81 01 01 09  299.0   1.00  289.8   4      92.5   213.3    0.1490      -3.9
0.1500   0   0.00
81 01 01 10   54.2   1.34  291.5   3     138.0   234.7    0.1883      -5.4
0.1500   0   0.00
81 01 01 11   89.1   1.79  294.3   3     183.5   256.0    0.2316      -9.0
0.1500   0   0.00
81 01 01 12  103.1   1.34  297.6   2     229.0   277.3    0.1900      -5.1
0.1500   0   0.00
81 01 01 13   87.2   1.34  298.7   2     274.5   298.7    0.1878      -5.5
0.1500   0   0.00
```

```
81 01 01 14  124.2   1.79  299.8   3     320.0   320.0    0.2233     -11.7
0.1500   0   0.00
81 01 01 15  134.8   2.24  299.3   3     320.0   320.0    0.2485     -31.8
0.1500   0   0.00
81 01 01 16   98.2   2.24  298.7   4     320.0   320.0    0.1067      10.4
0.1500   0   0.00
81 01 01 17  110.1   2.24  295.4   5     325.6   318.5    0.1067      10.6
0.1500   0   0.00
81 01 01 18  210.1   1.00  291.5   6     357.2   310.3    0.0476       4.6
0.1500   0   0.00
81 01 01 19  268.0   1.00  289.8   7     388.8   302.1    0.0476       4.6
0.1500   0   0.00
81 01 01 20  303.2   1.00  287.0   7     420.4   293.9    0.0476       4.5
0.1500   0   0.00
81 01 01 21  291.1   1.34  286.5   7     452.0   285.7    0.0638       6.1
0.1500   0   0.00
81 01 01 22  294.5   1.34  287.0   7     483.5   277.4    0.0638       6.1
0.1500   0   0.00
81 01 01 23  293.2   0.00  285.9   7     515.1   269.2    0.0476       4.5
0.1500   0   0.00
81 01 01 24  292.2   0.00  285.4   7     546.7   261.0    0.0476       4.5
0.1500   0   0.00


*** NOTES:  STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
            FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.
```

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 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***         04/24/09
                                   *** Grading PM10 1st highest emissions
***         14:05:15
**MODELOPTs:
PAGE  11
CONC                     URBAN FLAT
NOCALM                DRYDPL

                             *** THE   1ST HIGHEST 24-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      GRADINGW,
GRADINGE,

                                            *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                       ** CONC OF 1STPM10  IN
MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - -
          270.42       466.97        9.31713  (81060224)
386.23       404.12        1.70025  (81112424)
          387.90       552.11        1.73415  (81051424)
351.40       753.95        0.64925  (81010624)
          367.15       731.12        0.75629  (81031824)
467.14       732.46        0.56553  (81061224)
          567.13       733.79        0.37421  (81061224)
667.12       735.12        0.22927  (81031924)
          767.12       736.46        0.22629  (81031924)
365.43       598.25        1.85041  (81061224)
          465.36       594.67        0.79800  (81060124)
565.30       591.10        0.57959  (81060124)
          665.23       587.52        0.38194  (81051424)
765.17       583.94        0.28100  (81051424)
          559.05       499.30        0.76253  (81051424)
658.80       492.31        0.46479  (81051424)
          758.56       485.33        0.30960  (81051424)
324.71       813.13        0.61932  (81072224)
          346.35       910.76        0.41368  (81072224)
367.99      1008.39        0.29771  (81072224)
          367.55       481.80        3.30871  (81051424)
458.87       479.66        1.45512  (81051424)
          542.50       378.92        0.64662  (81112424)
466.65       827.54        0.46456  (81102824)
          648.25       375.92        0.39556  (81112424)
739.66       372.50        0.30785  (81081824)
          611.73       832.02        0.29323  (81061224)
535.22       889.76        0.33888  (81102824)
          458.71       947.50        0.27027  (81010624)
348.61       382.82        2.14439  (81123124)
```

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        447.87       370.67        1.06393  (81123124)
638.03       271.86        0.38151  (81123124)
        736.35       253.61        0.28202  (81123124)
349.64       233.78        0.84839  (81032924)
        449.52       229.03        0.56079  (81050224)
549.41       224.28        0.40895  (81050224)
        645.23       159.85        0.25581  (81050224)
744.98       152.88        0.17950  (81041724)
        344.72       122.61        0.32218  (81032924)
439.22        91.05        0.33531  (81032924)
        533.62        58.51        0.23966  (81032924)
627.98        25.66        0.16266  (81050224)
        722.25        -8.16        0.14300  (81050224)
513.75       -30.40        0.19634  (81032924)
        605.58       -69.99        0.15817  (81032924)
697.41      -109.59        0.10948  (81032924)
        331.13        29.10        0.17910  (81030624)
426.90         0.32        0.19259  (81032924)
        210.15      -109.11        0.17028  (81032924)
292.90       -64.37        0.13218  (81032924)
        186.86      -204.48        0.13176  (81032924)
277.96      -194.96        0.09648  (81032924)
        366.17      -120.77        0.09857  (81030624)
160.67      -300.15        0.10317  (81032924)
        258.28      -289.95        0.08327  (81032924)
376.55      -254.39        0.06268  (81032924)
        438.53      -178.29        0.09295  (81030624)
130.15      -396.27        0.08103  (81032924)
        221.25      -386.75        0.07674  (81032924)
312.35      -377.23        0.05395  (81032924)
        422.74      -344.04        0.05248  (81030624)
480.58      -273.02        0.07180  (81030624)
        538.43      -202.00        0.09850  (81032924)
103.06      -492.03        0.06464  (81032924)
        197.96      -482.12        0.06652  (81032924)
292.86      -472.21        0.04842  (81032924)
        387.75      -462.29        0.03785  (81032924)
491.19      -406.36        0.05079  (81030624)
        551.45      -332.38        0.06228  (81032924)
611.70      -258.40        0.09211  (81032924)
         90.52       -32.88        0.11309  (81022524)
-9.36        -27.96       0.09406  (81030624)
         44.72      -141.15        0.07647  (81042324)             -
109.24       -23.04        0.09431  (81041124)
        -81.76      -117.22        0.06513  (81041124)              -
36.84       -199.01       0.06038  (81042324)
         42.97      -256.06        0.06034  (81022524)             -
209.12       -18.12        0.11489  (81022624)
       -181.64      -112.30        0.06726  (81041124)             -
154.16      -206.47        0.05163  (81041124)
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE  12
CONC                    URBAN FLAT
NOCALM               DRYDPL

                             *** THE   1ST HIGHEST 24-HR AVERAGE
CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):      GRADINGW,
GRADINGE,

                                          *** DISCRETE CARTESIAN RECEPTOR
POINTS ***

                                     ** CONC OF 1STPM10  IN
MICROGRAMS/M**3                        **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-
COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
         -91.79      -275.89        0.04682  (81030624)             -
11.99      -332.94        0.04601  (81042324)
        -307.98       -16.69        0.18356  (81022624)             -
277.44      -121.33        0.05948  (81022624)
        -246.91      -225.96        0.04826  (81041124)             -
197.00      -316.85        0.03781  (81041124)
        -108.32      -380.24        0.03912  (81042324)             -
19.65       -443.63        0.03604  (81022524)
          42.71        48.14        0.13803  (81030624)             -
56.58         59.99        0.13483  (81041124)
        -155.88        71.83        0.22206  (81022624)             -
255.17        83.68        0.22151  (81022624)
        -348.15        72.69        0.12310  (81022624)
99.35        143.74        0.23990  (81030624)
          81.21       242.09        0.45401  (81041124)             -
14.16        168.92        0.22655  (81041124)
          57.60       337.44        1.05885  (81022624)             -
41.02        283.59        0.47853  (81081124)
        -105.54       197.74        0.40349  (81022624)
41.03        436.63        1.45787  (81111724)
         -52.90       385.35        0.59604  (81112624)             -
161.89       301.73        0.38126  (81081424)
        -207.10       204.73        0.27380  (81081124)
19.96        533.37        1.68913  (81120724)
         -82.77       477.28        0.89871  (81111924)             -
185.50       421.18        0.46366  (81092224)
        -252.71       331.76        0.24388  (81091524)             -
302.15       225.67        0.23132  (81081424)
        -246.68       489.63        0.41376  (81111624)
116.03       495.87        3.60517  (81122724)
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         -68.28       573.52        1.06180  (81120724)
175.84       575.80        0.70366  (81121924)
        -271.88       579.13        0.54747  (81111924)
86.64       617.52        1.72878  (81022020)
         -10.53       657.28        0.98994  (81022024)
79.59       729.60        0.70449  (81121024)
        -149.93       800.07        0.54830  (81121024)
201.26       725.63        0.58463  (81011024)
          99.41       710.14        0.85309  (81111524)
18.66       768.22        0.68083  (81022024)
         -49.63       841.21        0.49490  (81022024)
117.89       914.26        0.38498  (81022024)
         196.11       866.86        0.49276  (81090524)
140.76       794.93        0.62263  (81021424)
         179.57       965.48        0.34005  (81090524)
95.96       915.30        0.38012  (81021424)
         160.41      1062.53        0.25181  (81090524)
66.35      1006.08        0.27975  (81021424)
         -11.81       937.39        0.26860  (81080624)
144.58      1161.58        0.19395  (81090524)
          53.37      1106.84        0.20316  (81031124)
37.84      1052.10        0.21694  (81041624)
         128.44      1260.45        0.15441  (81090524)
38.86      1206.68        0.16181  (81083024)
         -50.72      1152.92        0.17525  (81080824)
140.30      1099.15        0.18954  (81111524)
        -184.46      1010.44        0.25334  (81022024)
213.49       910.08        0.43206  (81022024)
        -242.52       809.72        0.38735  (81121524)
257.44      1069.95        0.25974  (81080324)
         554.23      1012.89        0.23807  (81031824)
450.86      1117.11        0.13158  (81072224)
         348.44      1142.21        0.21141  (81050824)
246.01      1167.32        0.20371  (81083124)
         733.47       883.59        0.18298  (81061224)
684.58       969.52        0.16409  (81061224)
         635.69      1055.45        0.20212  (81102824)
586.80      1141.38        0.14988  (81031824)
         514.34      1196.12        0.10877  (81010624)
418.32      1219.65        0.17110  (81072224)
         322.29      1243.19        0.16948  (81013024)
226.27      1266.72        0.15802  (81083124)
         233.56       780.78        0.78414  (81083124)
235.79       756.82        0.90685  (81083124)
         239.82       666.76        1.68759  (81083124)
241.41       639.95        2.13707  (81080324)
         235.82       563.88        7.25156  (81051924)
228.39       556.95        8.61638  (81012724)
         221.37       534.48       12.54132  (81123024)
229.76       500.51       10.41105  (81112624)
```

```
-     *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
      ***         04/24/09
                                        *** Grading PM10 1st highest emissions
      ***         14:05:15
 -    **MODELOPTs:
      PAGE  13
-     CONC                    URBAN FLAT
      NOCALM               DRYDPL

                                  *** THE   1ST HIGHEST 24-HR AVERAGE
-     CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                      INCLUDING SOURCE(S):      GRADINGW,
      GRADINGE,

                                               *** DISCRETE CARTESIAN RECEPTOR
      POINTS ***

                                          ** CONC OF 1STPM10  IN
      MICROGRAMS/M**3                       **

 -         X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-
      COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)
      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
      - - - - - - - - - - - - - - - - - - - - - - - - - - - -
-              224.75      472.86       12.17292  (81012724)
      208.18       457.04       15.43393  (81123024)
-              192.78      420.49       14.86400  (81123024)
      216.31       395.75       10.44060  (81032924)
               218.85      336.11        3.23676  (81032924)
      215.25       329.16        2.85790  (81032924)
               215.81      296.73        1.90003  (81032924)
      200.98       266.92        1.27171  (81032924)
               194.28      134.02        0.49601  (81032924)
      203.19       122.65        0.47311  (81032924)
               192.00       96.97        0.40602  (81032924)
      185.44        67.84        0.34697  (81032924)
               144.88       60.36        0.24278  (81032924)
      142.01        36.30        0.22257  (81032924)
               183.07       30.74        0.29384  (81032924)
      181.24        -6.41        0.25232  (81032924)
               213.20      -15.86        0.23883  (81032924)
      235.36        57.88        0.30080  (81032924)
               238.27       88.39        0.34348  (81032924)
      246.26       106.92        0.35818  (81032924)
               244.44      130.90        0.41387  (81032924)
      249.17       144.34        0.43134  (81032924)
               246.99      161.41        0.48661  (81032924)
      246.20       187.75        0.58189  (81032924)
               249.75      238.53        0.83381  (81032924)
      253.94       326.67        2.44075  (81032924)
               244.75      344.88        3.55067  (81032924)
      251.12       379.19        7.19404  (81032924)
               249.35      394.98        9.50474  (81032924)
      253.22       426.58       12.06700  (81051424)
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         255.27       444.50       12.18580  (81060224)
257.83       453.82       12.72797  (81060224)
         261.81       484.80       11.29069  (81032924)
273.99       517.09       11.58020  (81061224)
         259.78       520.24       10.77344  (81051924)
265.49       601.83        2.85746  (81051924)
         267.95       670.54        1.63472  (81050824)
267.16       729.79        1.09327  (81013024)
         260.98       785.38        0.75924  (81080324)
```

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 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE  14
CONC                    URBAN FLAT
NOCALM               DRYDPL

                                               *** THE SUMMARY OF HIGHEST
24-HR RESULTS ***


                                       ** CONC OF 1STPM10  IN
MICROGRAMS/M**3                          **

                                                     DATE
NETWORK
GROUP ID                         AVERAGE CONC     (YYMMDDHH)
RECEPTOR  (XR, YR, ZELEV, ZFLAG)     OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH  1ST HIGH VALUE IS      15.43393  ON 81123024: AT (
208.18,      457.04,      0.00,      0.00)  DC      NA


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
                      BD = BOUNDARY
```

```
 *** ISCST3 - VERSION 02035 ***    *** Reche Vista Drive Realignment
***        04/24/09
                                   *** Grading PM10 1st highest emissions
***        14:05:15
**MODELOPTs:
PAGE  15
CONC                    URBAN FLAT
NOCALM               DRYDPL


*** Message Summary : ISCST3 Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            0 Warning Message(s)
A Total of         1398 Informational Message(s)

A Total of         1398 Calm Hours Identified


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** ISCST3 Finishes Successfully ***
   ************************************
```

APPENDIX D

FHWA AND FTA RTIP CONCURRENCE LETTERS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CALIFORNIA DIVISION
650 Capitol Mall, Suite 4-100
Sacramento, CA. 95814

November 17, 2008

IN REPLY REFER TO
HDA-CA
Document # S52143

Mr. Hasan Ikhrata, Executive Officer
Southern California Association of Governments
818 West 7th Street, 12th Floor
Los Angeles, CA 90017

Dear Mr. Ikhrata:

SUBJECT: Conformity Determination for SCAG's 2008 Regional Transportation Improvement Program and Conformity Redetermination for SCAG's 2008 Regional Transportation Plan

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our review of the conformity determination for the Southern California Association of Governments' (SCAG) 2008 Regional Transportation Improvement Program (RTIP) and 2008 Regional Transportation Plan (RTP), *Making the Connections*. A FTA/FHWA air quality conformity determination is required for the new 2008 RTIP pursuant to the Environmental Protection Agency's (EPA) *Transportation Conformity Rule*, 40 CFR Parts 51 and 93, and the United States Department of Transportation's *Metropolitan Planning Rule*, 23 CFR Part 450. An air quality conformity redetermination is also being made for the 2008 RTP as part of the 2008 RTIP update process.

On June 5, 2008, SCAG adopted the 2008 RTIP and made the corresponding conformity determinations via Resolution 08-498-1. The conformity analysis submitted by SCAG indicates that all air quality conformity requirements have been met. Based on our review, we find that the 2008 RTP and 2008 RTIP conform to the applicable state implementation plan in accordance with the provisions of 40 CFR Parts 51 and 93. In accordance with the July 15, 2004, *Memorandum of Understanding (MOU) between the Federal Highway Administration, California Division and the Federal Transit Administration, Region IX*, the FTA has concurred with this conformity determination. Additionally, this conformity determination was made after consultation with the EPA, Region 9 office.

In accordance with the above MOU, the FHWA's single signature constitutes FHWA and FTA's joint air quality conformity determination for SCAG's new 2008 RTIP and conformity

MOVING THE AMERICAN ECONOMY

redetermination for SCAG's 2008 RTP. If you have any questions pertaining to this conformity finding, please contact Aimee Kratovil, FHWA, at (916) 498-5866.

Sincerely,

/s/ K. Sue Kiser

For
Gene K. Fong
Division Administrator

cc: (email):
Rich Macias, SCAG
Jonathan Nadler, SCAG
Rosemary Ayala, SCAG
Naresh Amatya, SCAG
Karina O'Connor, EPA
Ted Matley, FTA
Mike Brady, Caltrans HQ
Rachel Falsetti, Caltrans HQ
Michelle Noch, FHWA
Aimee Kratovil, FHWA

AKratovil/ac

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CALIFORNIA DIVISION
650 Capitol Mall, Suite 4-100
Sacramento, CA. 95814

January 14, 2009

IN REPLY REFER TO
HDA-CA
Document #: S52370

Mr. Hasan Ikhrata, Executive Officer
Southern California Association of Governments
818 West 7th Street, 12th Floor
Los Angeles, CA 90017

Dear Mr. Ikhrata:

SUBJECT: Conformity Determination for SCAG's Amendment #1 to the 2008 Regional Transportation Plan and Amendment #08-01 to the 2008 Regional Transportation Improvement Program

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our review of the conformity determination for the Southern California Association of Governments' (SCAG) Amendment #1 to the 2008 Regional Transportation Plan (RTP), *Making the Connections,* and Amendment #08-01 to the 2008 Regional Transportation Improvement Program (RTIP). A FTA/FHWA air quality conformity determination is required for these Amendments pursuant to the Environmental Protection Agency's (EPA) *Transportation Conformity Rule*, 40 CFR Parts 51 and 93, and the United States Department of Transportation's *Metropolitan Planning Rule*, 23 CFR Part 450.

On December 4, 2008, SCAG adopted Amendment #1 to the 2008 RTP and Amendment #08-01 to the 2008 RTIP and made the corresponding conformity determinations via Resolution 08-504-3. The conformity analysis submitted by SCAG indicates that all air quality conformity requirements have been met. Based on our review, we find that Amendment #1 to the 2008 RTP and Amendment #08-01 to the 2008 RTIP conform to the applicable state implementation plan in accordance with the provisions of 40 CFR Parts 51 and 93. In accordance with the July 15, 2004, *Memorandum of Understanding (MOU) between the Federal Highway Administration, California Division and the Federal Transit Administration, Region IX*, the FTA has concurred with this conformity determination. Additionally, this conformity determination was made after consultation with the EPA, Region 9 office.

In accordance with the above MOU, the FHWA's single signature constitutes FHWA and FTA's joint air quality conformity determination for SCAG's Amendment #1 to the 2008 RTP and

Amendment #08-01 to the 2008 RTIP. If you have any questions pertaining to this conformity finding, please contact Aimee Kratovil, FHWA, at (916) 498-5866.

Sincerely,

/s/ K. Sue Kiser

For
Vincent Mammano
Acting Division Administrator

cc: (email):
Rich Macias, SCAG
Jonathan Nadler, SCAG
Rosemary Ayala, SCAG
Naresh Amatya, SCAG
Karina O'Connor, EPA
Ted Matley, FTA
Mike Brady, Caltrans HQ
Rachel Falsetti, Caltrans HQ
Michelle Noch, FHWA
Aimee Kratovil, FHWA
Mayela Sosa, FHWA

AKratovil/ac

APPENDIX E

PAGES OF THE RTP AND RTIP THAT LIST THE PROPOSED PROJECT

Fund	ENG	R/W	CON	Total	Prior	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	Total
CITY FUNDS	2		21	23		23						23
RIV071268 Total	15		185	200		200						200

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amend	Source
RIV060121	Riverside	SCAB	R371	RIV060121	CAX63				L	NON-EXEMPT	0	2008
							PTC	6,700	Agency	MARCH JOINT POWERS AUTHORITY		

ON VAN BUREN BLVD NEAR MARCH AIR RESERVE BASE: WIDEN FROM 4 TO 6 LANES FROM APPROXIMATELY 0.5 MILES WEST OF I-215 TO BARTON ST

Fund	ENG	R/W	CON	Total	Prior	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	Total
AGENCY		2,000		2,000	2,000							2,000
WESTERN RIV TUMF	1,000	200	3,500	4,700	1,200	3,500						4,700
RIV060121 Total	1,000	2,200	3,500	6,700	3,200	3,500						6,700

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amend	Source
RIV011210	Riverside	SCAB		RIV011210	NCR31				L	EXEMPT	0	2008
							PTC	7,040	Agency	MORENO VALLEY		

IN MORENO VALLEY/COUNTY - REALIGN RECHE VISTA DR (PERRIS BLVD TO 200' N/O CITY LIMITS - APPROX 2,000') & INSTALL SIGNAL (PERRIS/HEACOCK/RECHE VISTA DR)

Fund	ENG	R/W	CON	Total	Prior	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	Total
STP LOCAL			1,967	1,967				1,967				1,967
CITY FUNDS	810	20	4,243	5,073	810	20		4,243				5,073
RIV011210 Total	810	20	6,210	7,040	810	20		6,210				7,040

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amend	Source
RIV041044	Riverside	SCAB	R372	RIV041044	CAX63				L	NON-EXEMPT	0	2008
							PTC	14,669	Agency	MORENO VALLEY		

IN MORENO VALLEY: WIDEN PERRIS BLVD 2 TO 6 LNS (PERRIS VALLEY STORM DRAIN LATERAL B TO CACTUS AVE., INCLUDING CURB, GUTTER, SIDEWALKS, SIGNALS, & MEDIANS

Fund	ENG	R/W	CON	Total	Prior	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	Total
CITY FUNDS	85		2,875	2,960	85		2,875					2,960
WESTERN RIV TUMF	980	1,521	6,431	8,932	980	1,521	6,431					8,932
RIV CO SALES TAX	366	696	1,715	2,777	366	696	1,715					2,777
RIV041044 Total	1,431	2,217	11,021	14,669	1,431	2,217	11,021					14,669

ProjectID	County	Air Basin	Model	RTP ID	Program	Route	Begin	End	System	Conformity Category	Amend	Source
RIV041045	Riverside	SCAB	R373	RIV041045	CAX63				L	NON-EXEMPT	0	2008
							PTC	10,600	Agency	MORENO VALLEY		

WIDEN PERRIS BLVD FROM 2 TO 6 LANES FROM IRONWOOD AVE TO MANZANITA AVE INCLUDING CURB, GUTTER, SIDEWALKS, SIGNAL MODS, STREET LIGHTS & MEDIANS IMPROVEMENTS

Fund	ENG	R/W	CON	Total	Prior	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	Total
CITY FUNDS	150	100	6,394	6,644	250		6,394					6,644
WESTERN RIV TUMF	470	1,000	1,830	3,300	1,470		1,830					3,300
RIV CO SALES TAX	165	491		656	656							656
RIV041045 Total	785	1,591	8,224	10,600	2,376		8,224					10,600

RIVERSIDE COUNTY RTIP PROJECTS				
SYS-TEM*	RTP ID	ROUTE	DESCRIPTION	PROJECT COST ($1,000'S)
L	RIV010227	0	CORONA ADVANCED TRAFFIC MANAGEMENT SYSTEM (ATMS) - AND REGIONAL ITS INTEGRATION PARTS 1 AND 2	$1,362
L	RIV011201	0	IN PALM DESERT/RANCHO MIRAGE - WIDEN MONTEREY AVE FROM 4 TO 6 LANES, INSTALL CURB/GUTTER & MEDIAN, AND UTLITY RELOCATION FROM DINAH SHORE DR TO GERALD FORD DR (APPROX 1 MILE)	$1,000
L	RIV011203	0	IN PALM SPRINGS - WIDEN INDIAN CANYON DRIVE FROM 2 TO 4 LANES AT GRADE (NO BRIDGE) FROM THE UPRR BRIDGE TO TRAMVIEW ROAD (APPROX 2 MILES)	$4,961
L	RIV011204	0	IN COACHELLA ON DILLON RD - CONSTRUCT 4 LANE GRADE SEPARATION OVER UPRR TRACKS AND INDIO/GRAPEFRUIT BLVD (HWY 111) (PUC#: B613.0)	$16,107
L	RIV011205	0	IN MORENO VALLEY/PERRIS - WIDEN PERRIS BLVD 2 TO 4 LANES FROM RAMONA EXPRESSWAY TO PERRIS VALLEY STORM DRAIN - LATERAL 'A' (APPROX. 2 MILES)	$5,226
L	RIV011208	0	IN RIVERSIDE - WIDEN VAN BUREN BLVD FROM 4 TO 6 LANES FROM JACKSON STREET TO THE SANTA ANA RIVER AND ADD DEDICATED RIGHT-TURN LANES AT MAJOR INTERSECTIONS	$15,104
L	RIV011209	0	IN COACHELLA - WIDEN DILLON ROAD FROM 2 TO 4 LANES FROM HWY 86 TO I-10, CONSTRUCT MEDIAN CURB, AND INSTALL/INTERCONNECT 2 SIGNALS (APPROX. .75 MILE)	$3,200
L	RIV011210	0	IN MORENO VALLEY/COUNTY - REALIGN RECHE VISTA DR (PERRIS BLVD TO 200' N/O CITY LIMITS - APPROX 2,000') & INSTALL SIGNAL (PERRIS/HEACOCK/RECHE VISTA DR)	$7,040
L	RIV011212	0	IN CATHEDRAL CITY ON RAMON RD - DATE PALM DR TO E. CITY LIMITS (1,500' E/O DA VALL) - WIDEN 4 TO 6 LNS & PAVEMENT REHAB, SIDEWALKS, SIGNAL INTERCONNECT, RETAINING WALLS, DRAIN IMP.	$1,847
L	RIV011236	0	IN RIV COUNTY & MURRIETA - EXTEND/CONSTRUCT CLINTON KEITH ROAD (6 LANES TOTAL - APPROX 3.4 MILES) WITH 2 BRIDGES FROM ANTELOPE ROAD TO WINCHESTER ROAD (SR79)	$62,400
L	RIV011240	0	IN CORONA ON MCKINLEY ST - CONSTRUCT 6 LANE (3 LANES EACH DIR) GRADE SEPARATION AT BNSF RAILROAD (PA&ED AND PRE-DESIGN ONLY)	$109,200
L	RIV011241	0	IN CORONA ON AUTO CENTER DRIVE - CONSTRUCT 4 LANE OVERCROSSING (GRADE SEPARATION) OVER BNSF RAILROAD (PA&ED AND PRE-DESIGN ONLY)	$29,720
L	RIV031202	0	IN THE CITY OF BANNING - CONSTRUCT 4 LANE (2 LANES EACH DIR.) RAMSEY STREET EXTENSION FROM HATHAWAY STREET TO FIELDS ROAD (APPROX 2.2 MILES) (DEMO ID#: 213, APPN CODE: 4260)	$10,562
L	RIV031203	0	MAGNOLIA AVE CORRIDOR (RIMPAU AVE TO E. 6TH ST): WIDEN SECTIONS 2 TO 6 & 4 TO 6 LNS, RECON/CHANNELIZATION, SAFETY & SIGNAL INSTALL/MODS (THIS PHASE: MAGNOLIA AT RIMPAU - 4 TO 6)	$1,835
L	RIV031204	0	IN MURRIETA - CONSTRUCT NEW 2 LANE GUAVA ST. BRIDGE (400') OVER MURRIETA CREEK FROM WASHINGTON AVE TO ADAMS AVE W/ SHOULDERS & ALL REQUIRED APPROACHES (BR#: 56C0162)	$6,418
L	RIV031205	0	IN THE CITY OF PALM SPRINGS - WIDEN RAMON ROAD 4 TO 6 LANES FROM EL CIELO TO SUNRISE WAY (APPROX 1 MILE)	$4,750

Air Quality Conformity Analysis

Reche Vista Drive Realignment from Perris Boulevard/Heacock Street to the City Limits and the Installation of a Traffic Signal at the intersection of Perris Boulevard/Reche Vista Drive/Heacock Street

The Project will be located in the City of Moreno and County of Riverside. It encompasses Reche Vista Drive from Perris Boulevard /Heacock Street to the City limits in the County of Riverside

8-RIV-R010

STPL 5441

10-2004

Prepared By: ____________________________________ Date: ______________________

Senior Air Quality Analyst
Chambers Group, Inc

Caltrans

Table of Contents

List of Tables

List of Figures

Section 1. Introduction and Project Description

This Air Quality Conformity Analysis contains the information that is required by FHWA to make an air quality conformity determination for the Reche Vista Drive Realignment pursuant to Section 6005 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). This analysis has been prepared to be consistent with FHWA's June 21, 2007 guidance on Project-Level Conformity Determinations and NEPA Assumption and Conformity Analysis Documentation checklist.

1.1. Project Description

The Project proposes to "fill in" a highway gap by realigning Reche Vista Drive between the Perris Boulevard/Heacock Street intersection and the northerly City limits. The realignment of Reche Vista Drive is a northerly extension of the projected alignment of Perris Boulevard. Roadway improvements will include realignment over existing right of way and construction of Reche Vista Drive to a two-lane roadway with paved shoulders. The existing Perris Boulevard/Heacock Street intersection will become a signalized T-intersection for the three merging streets. The need for this project is to provide roadway infrastructure improvements that shall reduce traffic congestion, improve safety and reduce travel times. The project will replace a winding switchback portion of Reche Vista Drive between the intersection of Reche Vista Drive/Heacock Street and the City limits. The improved roadway will have a length of approximately 2000 feet. Both Heacock and Reche Vista Drive are existing two-lane roadways, and have sufficient right of way for the realignment of Reche Vista Drive. Reche Vista Drive is a multi-jurisdictional highway that provides access from the City of Moreno Valley through Riverside County to cities in southern San Bernardino County. Future residential development is planned along the west side of the realigned Reche Vista Drive between the Perris Boulevard/Heacock Street intersection and the northerly City limits. The transition of the proposed roadway improvements to match existing conditions, northerly of the north City limits, will be coordinated with the County of Riverside. Additional design survey/topographic mapping will be performed to ensure proper transition.

Need and Purpose:

The City of Moreno Valley predicts that by the year 2030, 21,800 vehicles per day will be traveling between Moreno Valley and the cities to the north. Realigning Reche Vista Drive, and thereby "filling in" the existing arterial highway gap in the Perris Boulevard alignment, will primarily assist these commuters traveling to and from commercial, industrial and residential developments in the surrounding areas.

The realignment of Reche Vista Drive will replace the existing winding switchback section of Reche Vista Drive located just to the west of the proposed roadway alignment. This realignment will create a direct connection between Perris Boulevard and Reche Vista Drive. The realignment will also result in the elimination of the three-legged all-way stop control intersection of Reche Vista Drive at Heacock Street. Elimination of this all-way stop-control will reduce vehicle delays and congestion. A traffic signal will also be installed at the proposed intersection of Perris Boulevard, Heacock Street, and Reche Vista Drive. This signal will reduce vehicle delays and thereby help reduce air emissions.

Reche Vista Drive is an alternative route between the City of Moreno Valley and south San Bernardino County. Vehicles traveling this route would be provided an alternative to using the congested State Route 60 and Interstate 215 freeway corridors. The project will enhance air quality by reducing Vehicular Hours of Travel (VHT) and Vehicle Miles Traveled (VMT).

The benefits of completing the gap of the Perris Boulevard/Reche Vista Drive alignment to the north City limits carry over into the County of Riverside and San Bernardino County. Currently, the County of Riverside has received funding and is preparing to realign and rehabilitate Reche Vista Drive and- Reche Canyon Drive from the San Bernardino County/Riverside County line to the northerly City limits of Moreno Valley.

1.2. Air Quality Regulatory Framework

Table 1 show that the project is located in an area that is nonattainment for Ozone (O_3), Particulate Matter (PM10), and Particulate Matter (PM2.5) and maintenance for Nitrogen Dioxide (NO_2) and Carbon Monoxide (CO). This analysis focuses on these criteria pollutant(s).

Table 1. Project Area Attainment Status

Criteria Pollutant	Federal Attainment Status
Ozone (O_3)	Nonattainment
Nitrogen Dioxide (NO_2)	Maintenance
Carbon Monoxide (CO)	Maintenance
Particulate Matter (PM10)	Nonattainment
Particulate Matter (PM2.5)	Nonattainment

Based on information found at http://www.epa.gov/oar/oaqps/greenbk/, the Project is within that portion of the non-attainment and maintenance areas of the air basin within Riverside County which lies to the west of a line described as follows:

Beginning at the Riverside - San Diego County boundary and running north along the range line common to Range 4 East and Range 3 East, San Bernardino Base and Meridian; then east along the township line common to Township 8 South and Township 7 South; then north along the range line common to Range 5 East and Range 4 East; then west along the township line common to Township 6 South and Township 7 South to the southwest corner of Section 34, Township 6 South, Range 4 East; then north along the west boundaries of Sections 34, 27, 22, 15, 10, and 3, Township 6 South, Range 4 East; then west along the township line common to Township 5 South and Township 6 South; then north along the range line common to Range 4 East and Range 3 East; then west along the south boundaries of Sections 13, 14, 15, 16, 17, and 18, Township 5 South, Range 3 East; then north along the range line common to Range 2 East and Range 3 East to the Riverside-San Bernardino county line.

Section 2. Regional Conformity

The Reche Vista Drive Realignment Project was included in the regional emissions analysis conducted by the Southern California Association of Governments (SCAG), which is the Regional Transportation Planning Agency (RTPA) for the conforming Moreno Valley/Riverside County portion of the Regional Transportation Plan (RTIP). The project—Realign Reche Vista Drive (Perris Blvd. to 200 'N/O City Limits – Approx. 2,000' RTIP/FTIP ID: RIV011210) and install signal (Perris/Heacock/Reche Vista Dr. RTIP/FTIP ID: RIV011210) are in the SCAG RITP dated October 4, 2004. The project's design concept and scope have not changed significantly from what was analyzed in the RTIP (RTIP/FTIP ID: RIV011210). This analysis found that the plan and, therefore, the individual projects contained in the plan, are conforming projects, and will have air quality impacts consistent with those identified in the state implementation plans (SIPs) for achieving the National Ambient Air Quality Standards (NAAQS). FHWA determined the RTP to conform to the SIP on October 4, 2004. Additional documentation related to the regional emissions analysis is contained in Appendix A.

The Reche Vista Drive Realignment project is also included in the regional transportation plan (RTP) RIVO11210 dated October 4, 2004. The project's open to the public year is consistent with (within the same regional emission analysis period as) the construction completion date identified in the federal TIP and/or RTP. The federal TIP gives priority to eligible Transportation Control Measures (TCMs) identified in the SIP and provides sufficient funds to provide for their implementation. FHWA determined the TIP to conform to the SIP on October 4, 2004. Documentation related to the public and interagency consultation process conducted to develop the TIP is contained in Appendix A.

Section 3. Project-Level Conformity

3.1. Carbon Monoxide Hot-Spot Analysis

The California Project-Level Carbon Monoxide Protocol[1] (CO Protocol) was used to analyze CO impacts for the Reche Vista Drive Realignment project. The hot-spot analysis covered the most congested intersections affected by the project in 2030.

The ambient air quality effects of traffic emissions were evaluated using the modeling procedures described in Appendix B. The assumptions used in the hot-spot analysis are consistent with those used in the regional emissions analysis.

The modeling results shown in Appendix B indicate that total CO concentrations would not cause or contribute to any new localized violations of the federal 1-hour or 8-hour CO ambient standards.

The NEPA document for this project does not identify specific mitigation, minimization, or avoidance measures for CO. A written commitment to implement such control measures is therefore not required. The Project by its' nature will reduce CO.

The approved RTP and TIP for the project area has no CO mitigation or control measures that relate to the project's construction or operation. Therefore, a written commitment to implement CO control measures is not required.

3.2. PM2.5/PM10 Hot-Spot Analysis

The proposed project is not considered a Point of Air Quality Concern (POAQC) because it does not meet the definition of a POAQC as defined in EPA's Transportation Conformity Guidance (Final Rule), dated March 10, 2006. The following briefly describes why the project does not fit the five types of Projects considered POAQC in the EPA Transportation Conformity Guidance:

1) The project is not a new or expanded highway and will not increase diesel vehicles (defined as greater than 125,000 Annual Average Daily Traffic (AADT) and 8% or more of such AADT is diesel truck traffic) along the proposed alignment;

[1] CAL3QHCR can also be used, with EMFAC emission factors, per EPA's modeling guidance in place of the CO Protocol.

2) The project will not increase the number of diesel vehicles, or change the Level of Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;

3) The Project is not a new bus and rail terminal or transfer point and does not result in a significant number of diesel vehicles congregating at a single location;

4) The Project is not an expanded bus and rail terminals or transfer point; and

5) While the Project is in an area, which is identified as non attainment for $PM_{2.5}$ or PM_{10} in the implementation plans, the project does not result in an increase in traffic volumes or increase the number of diesel vehicles using the roadway, and therefore, will not increase the sources of particulate matter in the affected area.

Therefore, a PM hot-spot analysis is not required.

3.3. Construction-Related Hot-Spot Emissions

As construction of the project is expected to last one year, construction-related emissions were not considered in the hot-spot analysis.

Appendix A. Additional Documentation Related to Regional Conformity

Regional Emissions Analysis Conducted for Conforming RTP

The regional emissions analysis found that regional emissions will not exceed the SIP's emission budgets for mobile sources in the build year, a horizon year at least 20 years from when conformity analysis started, and additional years meeting conformity regulation requirements for periodic analysis. The regional emissions analysis was based on the latest population and employment projections for Western Riverside County that were adopted by the Southern California Association of Governments (SCAG) at the time the conformity analysis was started on October 4, 2004. These assumptions are less than five years old. The modeling was conducted using current and future population, employment, traffic, and congestion estimates. The traffic data, including the fleet mix data, were based on the most recently available vehicle registration data included in the EMFAC2007 model. The EMFAC2007 model, developed by the California Air Resources Board, is the most recent emissions model approved for use in California by the U.S. EPA.

Public and Interagency Consultation Process for TIP

The federal TIP was developed in accordance with SCAG policies for community input and interagency consultation procedures. These procedures ensure that the public has adequate opportunity to be informed of the federal TIP development process and encourages public participation and comment.

To document fulfillment of interagency and public consultation requirements, outlined in a specific implementation plan, provide any further information on the public and interagency consultation process, as applicable, including summarizing comments and responses to comments received on the conformity tests and methodologies.

Appendix B. Carbon Monoxide Hot-Spot Analysis Modelling Procedures

The ambient air quality effects of project-related traffic emissions were evaluated using the CALINE4 dispersion model (Benson 1989) and the modeling procedures described below.

Roadway and Traffic Conditions

Traffic volumes and operating conditions used in the modeling were obtained from the traffic analysis prepared for this project. Carbon monoxide modeling was conducted using worst case scenario a. m. for existing and p.m. for 20 year with project traffic volumes.

Carbon monoxide modeling was performed for the following scenarios:

- Existing (2008),
- 22-year horizon year (2030) without project, and
- 22-year horizon year (2030) with project.

Vehicle Emission Rates

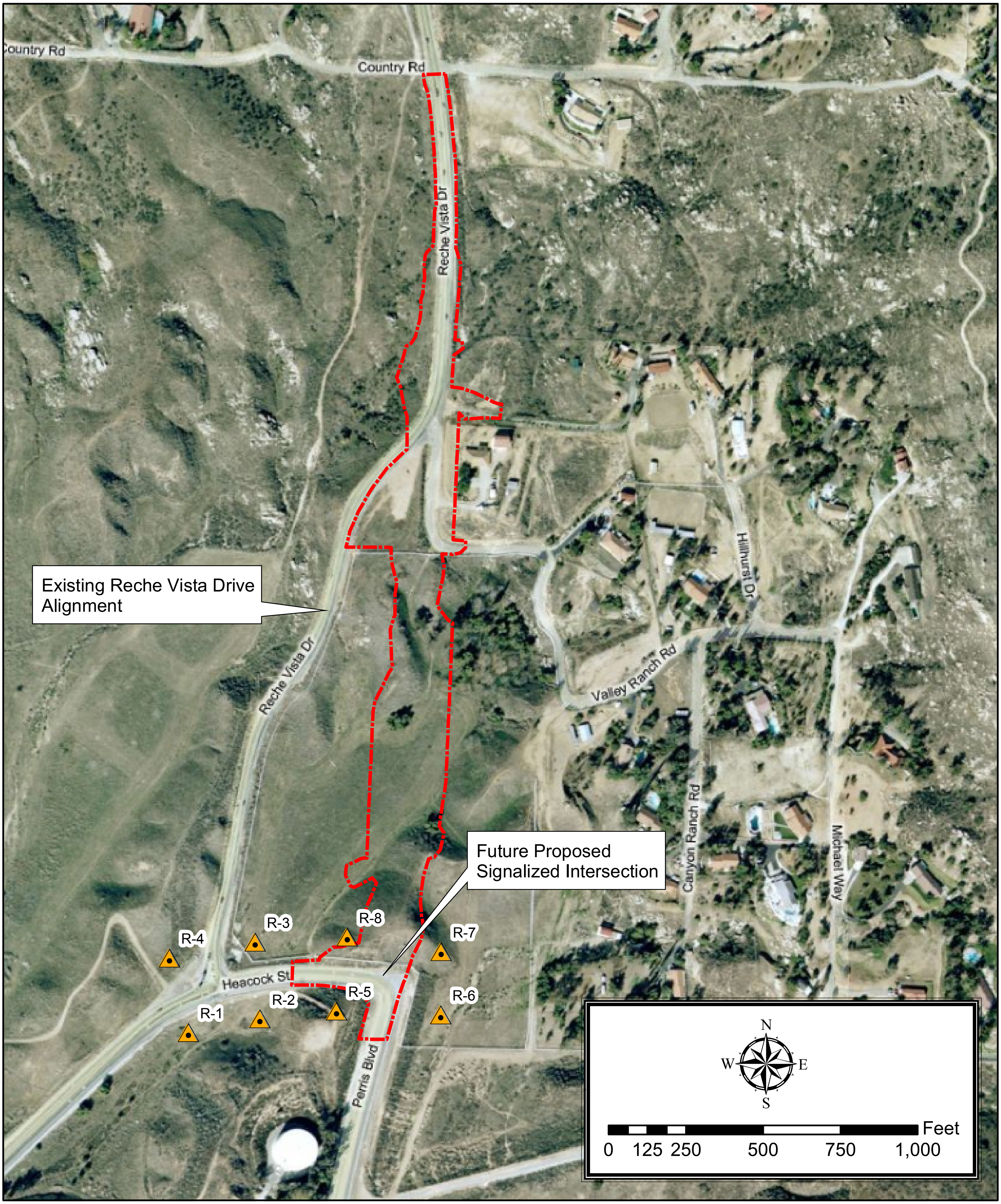
Vehicle emission rates were determined using the California Air Resources Board's EMFAC2007 emission rate program.

Receptor Locations

CO concentrations were estimated at four receptor locations located near the most congested intersections affected by the project. Those intersections included the following:

- Reche Vista and Drive and Heacock Street

Receptors were chosen based on Caltrans' CO protocol. Figure 1 shows the modeling network and receptors used for the proposed interchange analysis. Receptor heights were set at two feet.



Receptor Modeling Locations

Project Footprint

Reche Vista Drive Realignment Project
Federal Project No. STPL 5441(045)
Receptor Modeling Locations
Figure 1

Meteorological Conditions

Meteorological inputs to the CALINE4 model were determined using the methodology recommended in the CO protocol (Garza et al. 1997). The meteorological conditions used in the modeling represent a calm winter period. The worst-case wind angles option was used to determine a worst-case concentration for each receptor. The meteorological inputs include:

- 1 meter per second wind speed,
- Class 7 Atmospheric stability class ,
- 270 degree wind direction standard deviation, and
- 100 meters mixing height.

Background Concentrations and Eight-Hour Values

A background concentration of 4 parts per million (ppm) was added to the modeled 1-hour values to account for sources of CO not included in the modeling. A background concentration of 2.4 ppm was added to the modeled 8-hour values. All background concentration data were taken from the monitoring data provided by the Air Resources Board (California Air Resources Board, 2007) for Reche Vista Drive and Heacock Street.

The CO air quality modeling results are shown in Table 2.

Table 2. CO Modeling Results (in Parts Per Million)

Receptor	Existing Concentration (2008) 1-Hr	Existing Concentration (2008) 8-Hr	Future No Project (2030) 1-Hr	Future No Project (2030) 8-Hr	Future With Project (2030) 1-Hr	Future With Project (2030) 8-Hr
Reche Vista Drive and Heacock Street	5.1	3.2	5.1	3.2	4.6	2.8
CO Threshold	20.0	9.0	20.0	9.0	20.0	9.0